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PUBLIC DOCUMENT

NO. 31

ELEVENTH BIENNIAL REPORT
OF THE
State Board of Health

TO THE
GOVERNOR OF NORTH DAKOTA

For the Years 1909 and 1910

ALSO
REGISTRATION REPORT OF
VITAL STATISTICS

BISMARCK:
TRIBUNE, STATE PRINTERS AND BINDERS
1910.

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LETTER OF TRANSMITTAL.

Office of Secretary,
Grand Forks, N. D., Nov. 30, 1910.

*To His Excellency, John Burke, Governor of the State of North
Dakota:*

SIR: In compliance with the laws of the state, I have the honor to present to you the eleventh biennial report for the period ending June 30, 1910.

Respectfully,

J. GRASSICK, M. D.,
Superintendent of Public Health.

MEMBERS OF THE STATE BOARD OF HEALTH.

ANDREW MILLER, Attorney GeneralPresident
C. E. BENNETT, M. D.Vice President
J. GRASSICK, M. D., Secretary and State Registrar of Vital
Statistics.

GENERAL REPORT

The State Board of Health has during the biennial period included in this report endeavored to arouse an interest in matters pertaining to public health and to improve the sanitary conditions of our state, so far as the law enabled them, and the appropriation at their disposal permitted. There has been an increasing demand for information and advice both from the local health officials and from the general public. Never before has there been such an arousing of the public conscience in things that pertain to public health. Never before has the health officer had so many demands made on his time and talents, and never before has there been so much done in so short a time for the sanitary conditions of our people. This movement is not confined to North Dakota, but seems to be world-wide. It is a part of the great conservation movement that is sweeping over our nation; and as the health of our people is our greatest asset—it is only natural that it should receive its due share of attention.

Every year our sanitary problems are becoming more and more complex. They are not only increasing in numbers but in intricacy as well. So much so, that the whole time and attention of the executive officer of the Board should be entirely given over to the service. The time is certainly past, if ever it existed, when the chief health officer of the state should be obliged to engage in other pursuits in order to make a living, and to give whatever time was left to the state. This is a wrong conception of a health officer's position. There is no office in the state that is of greater importance, nor one that will give the people greater returns when rightly administered. On a question of pure economics, the state cannot afford to have anything short of the undivided time and ability of its chief health officer. Anything short of this is demoralizing to the service. As stated in my last report—and the experience of the past two years has served to intensify the conditions—"The health officer of the state should be given a salary sufficient to make it an object for a competent man to devote his whole time to the work, and with a sufficient appropriation at his disposal that he may be able to carry on an aggressive warfare against disease."

I would respectfully direct your attention to the various tables in the body of this report as furnishing interesting and instructive data relative to the vital statistics of our state for the biennial period. The other activities of the board are summarily dealt with throughout the report. We regret that the limited space at our disposal forbids of a more extended outline of our work.

FINANCIAL STATEMENT.

Receipts.

July 1, 1908.	Balance on hand.	Expense account.....	\$ 2,285.58
	Biennial appropriation.	Expenses	3,000.00
	Balance on hand.	Superintendent's salary	900.00
	Biennial appropriation.	Superintendent's salary	2,400.00
Total			\$ 8,585.58

Disbursements.

Date of Warrant	For What Issued	Amount
8- 8-1908	Expenses for May, 1908—	
	Stenographer	\$ 50.00
	Stamps and stamped envelopes	10.62
	Miscellaneous	10.40
9- 4-1908	Expenses for July, 1908—	
	Stenographer, salary	50.00
	Postage and vault rent	10.00
	Miscellaneous	10.07
10-21-1908	Expenses for August, 1908—	
	Stenographer	50.00
	Postage and vault rent	10.00
	Auto binders	8.75
	Miscellaneous	6.30
10-21-1908	Expenses for May, 1907—	
	Stenographer	35.00
	Postage	15.00
	Traveling expenses	36.17
	Furniture and vault rent	12.50
12-16-1908	Expenses for November—	
	Stenographer	50.00
	Postage	10.00
	Bulletins	19.00
	Vault rent	5.00
	Miscellaneous .....	.95
12-16-1908	Expenses for September and October, 1908—	
	Stenographer	100.00
	Postage and stamped envelopes	9.39
	Dues State and Provincial Boards of Health	10.00
	Bulletins	7.00
	Traveling expenses	42.00
	Vault rent	10.00
	Miscellaneous	1.15
2- 5-1909	Expenses for December, 1908—	
	Stenographer	54.50
	Postage and stamped envelopes	26.24
	Bulletins	19.00
	Vault rent	5.00
	Miscellaneous	2.85
3-25-1909	Expenses for January, 1909—	
	Stenographer	50.00
	Bulletins	19.00
	Postage	10.00

Disbursements—Continued.

Date of Warrant	For What Issued	Amount
	Vault rent	5.00
	Stationery	9.35
3-25-1909	Expenses for February, 1909—	
	Stenographer	50.00
	Postage and stamped envelopes	16.24
	Traveling expenses	19.65
	Vault rent	5.00
	Miscellaneous	7.30
4-12-1909	Expenses for March, 1909—	
	Stenographer	50.00
	Postage	5.93
	Bulletins, February and March	38.00
	Vault rent	5.00
6- 3-1909	Expenses for May—	
	Stenographer	50.00
	Postage	5.00
	Bulletins	19.00
	Vault rent	5.00
	Miscellaneous	2.40
6- 4-1909	Expenses for April, 1909—	
	Stenographer	50.00
	Postage	15.00
	Bulletins	19.00
	Vault rent	5.00
	Binders	5.75
	Miscellaneous	9.87
7- 9-1909	Bismarck Tribune Company, supplies	386.00
7-27-1909	Expenses for June, 1908—	
	Stenographer	50.00
	Vault rent	5.00
	Postage	11.00
	Miscellaneous	3.10
8-21-1909	Expenses for June, 1909—	
	Stenographer	50.00
	Expenses at Washington, D. C.	107.15
	Bulletins	19.00
	Postage	5.00
	Vault rent	5.00
	Miscellaneous	11.18
8-23-1909	Andrew Miller, expenses	44.60
9- 9-1909	Expenses for July, 1909—	
	Stenographer	50.00
	Postage	5.00
	Bulletins	19.00
	Binders	12.50
	Stationery, etc.	4.50
	Vault rent	5.00
9-29-1909	C. E. Bennett, expenses	20.20
10-27-1909	Expenses for August, 1909—	
	Stenographer	75.00
	Postage	11.63
	Bulletins	19.00

Disbursements—Continued.

Date of Warrant	For What Issued	Amount
	Vault rent	5.00
	Dues, State and Provincial Boards of Health	15.00
	Posters	5.25
	Miscellaneous	1.75
10-27-1909	Expenses for September, 1909—	
	Stenographer	50.00
	Postage .....	.41
	Bulletins	19.00
	Vault rent	5.00
12- 8-1909	Expenses for October, 1909—	
	Stenographer	50.00
	Postage	5.41
	Vault rent	5.00
	Bulletins	19.00
	Miscellaneous .....	.30
12-16-1909	Expenses for November, 1909—	
	Stenographer	50.00
	Postage	20.39
	Vault rent	5.00
	Bulletins	19.00
	Stationery	7.50
1-15-1910	Expenses for December, 1909—	
	Stenographer	50.00
	Postage	10.00
	Vault rent	5.00
	Bulletins	19.00
	Stationery	13.60
	Miscellaneous	2.90
	Stamps	5.00
2-21-1910	Expenses for January, 1910—	
	Stenographer	50.00
	Postage	10.00
	Bulletins	19.00
	Vault rent	5.00
	Traveling expenses	7.30
	Stationery	3.75
	File	2.50
	Miscellaneous	3.21
3-22-1910	Expenses for February, 1910—	
	Stenographer	50.00
	Postage	5.00
	Bulletins	19.00
	Vault rent	5.00
	Clerk hire	23.33
	Miscellaneous	1.74
4- 7-1910	Expenses for March, 1910—	
	Stenographer	50.00
	Postage	5.00
	Bulletins	19.00
	Vault rent	5.00
	Binders	15.00
	Stationery	3.00

Disbursements—Continued.

Date of Warrant	For What Issued	Amount
6- 9-1910	Traveling expenses	9.45
	Miscellaneous	1.25
	Expenses for April, 1910—	
	Stenographer	50.00
	Bulletins	19.00
	Vault rent	5.00
	Postage	5.00
6- 9-1910	Expenses to Washington, D. C.	108.10
	Miscellaneous	3.95
	Expenses for May, 1910—	
	Stenographer	50.00
	Postage	17.00
	Bulletins	19.00
	Vault rent	5.00
	Traveling expenses	2.00
	Miscellaneous	2.30
	Total expense account	\$ 3,070.03
6-30-1910	Total secretary's salary	2,400.00
6-30-1910	Balance salary account	900.00
	Balance expense account	2,215.55
	Total	\$ 8,585.58

STATE HEALTH.

"Resolved, That health and the protection of life are more precious to the people and more necessary to their happiness than even the extension of our commerce, the fostering of our agricultural interests, the solving of our financial problems, the cheapness or efficiency of our postal service, the improvement of our rivers and harbors, or the enlargement of our navy."

The above resolution was passed recently by the board of trade of New York, composed of hard-headed, practical, successful business men, and voiced in concrete form, from a business standpoint, the trend of modern thought on sanitary matters. For after the last word has been said, life and its perpetuation is the predominant factor in all problems, whether personal, social, state or national. Although these principles have long been recognized by statesmen and economists, we are only beginning to give them the attention that their importance demands. The spirit of commercialism has so thoroughly pervaded our policies that any movement that does not appeal to our material interests has been looked upon with disfavor. In the matter of the collection of correct vital statistics, for instance, which all recognize as the foundation on which is reared the whole structure of preventive medicine, not a single state has even a fairly complete registration of births and only a limited number have any record of deaths. In more than half of the United States a human being can be born and die without any official notice being taken of the fact. It is very embarrassing, to say the least, not to be able to prove that we were born! On the other hand, elaborate systems of ancestry, birth, career and death of pedigreed horse, cow, dog, etc., have been in existence for generations, while children are born and men and women die without the slightest record of these events being preserved. At our last legislation we asked for a small appropriation that this work might be efficiently carried out in our state. Our solons, however, did not see their way clear to grant it, but they did pass, at the same session, a "stallion registration act," with all the accessories necessary to put it into successful operation. There is pending in congress what is known as the Owen's bill (6049), establishing a national department of public health, with a cabinet officer at its head. At present, the health agencies of the nation are scattered through eight departments as bureaus. The system lacks in co-ordination and efficiency. There seems to be no logical reason why the treasury department, for instance, should be burdened with a bureau of health, or why a bureau of health should have to consult the chief of the treasury before acting on questions involving the sanitary conditions of our people. The secretary of the treasury received his appointment

because he was an expert on finance and not because he was an authority on public health. But he is the chief of the bureau of public health and marine hospital service. The surgeon general is subordinate to him and thus our public health is commercialized to a degree at times that is a menace to public safety. The history of the suppression of the bubonic plague at San Francisco is a recent example. When we consider the importance of the conservation of life and efficiency of our people, and when we further consider how lavish we have been in our efforts to conserve our material interests, we wonder why the several units of our public health agencies have so long been subordinated to other interests and dominated by unthinking commercialism. We can apply to the government at Washington and be supplied with the latest scientific data for the raising of poultry, the breeding of cattle, the selection of seed, the destruction of our agricultural pests, or the preservation of the health of our domestic animals; but we ask in vain for information on how to raise our children, how to preserve the health of our wives and families, or how to lessen the death rate from preventable diseases among human beings. Thousands have been expended in stamping out cholera among swine, but not one dollar for the eradication of pneumonia among human beings, which carried off in 1908 over 120,000 at an average of 36.7 years. The department of agriculture has expended millions of dollars in saving the lives of trees from attacks of insects, in warning farmers against blights affecting potatoes and other field crops, in exterminating parasitic growths that prey on the fruit trees, and in ostracising various species of weeds from the ranks of useful plants; but not a wheel of our federal medical machinery was ever set in motion for the alleviation or cure of diseases of the heart or kidney, which in 1908 carried off over 200,000 of our population. In our own state the same commercial spirit has been dominant. The live stock sanitary board created in 1907 has an appropriation for carrying on its work of protecting the health of the domestic animals of the state of ten thousand dollars annually, while the state board of health receives for expenses of conserving the health of men, women and children of the state only \$2,700 annually—slightly over one-quarter as much. The legislature in 1909 established a serum institution for the manufacture of vaccines, sera and other agents for the preservation, eradication, cure and control of tuberculosis, glanders, hog cholera, blackleg and other infectious and contagious diseases of our domestic animals, with an annual appropriation of \$3,000, but the same legislature refused to grant us help to start an educative propaganda relative to the infectiousness, preventability and curability of tuberculosis that has to its credit ten per cent of all our deaths. The disposal of sewage is one of the greatest problems we are called upon to solve. It is an ever increasing problem. With large additions to our population, rapid growth of cities, level character of our country, lack of large bodies

of water to act as receivers, the severity of our climate during the winter months, we are confronted with conditions that call for special scientific investigations to determine what methods are and what are not practical in our state for its safe disposal. A small appropriation was asked for the purpose of defraying the expenses of a set of experiments at our public health laboratory to determine by scientific tests the value of sewage purification plants to the end that typhoid fever, an ever present and increasing factor in our morbidity and mortality statistics, could be controlled, but this also was denied. Sufficient data has been given to show that in our federal and state legislatures the conservation of the health and lives of our citizens—the foundation on which is reared our national efficiency—has been subordinated to the conservation of our material interests.

I would not utter a word of censure against our federal or our state legislators in thus seeming to discriminate against our vital interests. We are passing through a stage of our development that is common to all nations. I am not unmindful of the fact that the problems of all new countries—and we are a new country—have a certain similarity. Our material problems come first. Homes have to be built, bodies clothed, feet shod, soil tilled, crops cultivated, barns erected, stock fed and otherwise provided for, industries developed, etc. It is with such as these that we have been wrestling and the endeavor has added brawn to our citizenship. I am of the opinion, however, that we have now reached that state in our evolution when we should devote more of our energies and more of our material assets to methods that would conserve more carefully our vital assets. I have not a word to say against the conservation of the great natural resources of our nation, of our water powers, of our oil and gas fields, of our coal mines and of our forests, neither have I one word to say against the conservation of the products of agriculture, be they crops or domesticated animals, but I do object to conserving coal mines, but not coal miners, to conserving the farm and its products, but not the farmer, to conserving plant life and animal life, but not human life, to placing our material assets above our vital assets.

President Taft, in a speech at Albany, N. Y., March 19th, 1910, said: "We have an agricultural department and we are spending \$14,000,000 or \$15,000,000 a year to tell the farmers by result of our research how they ought to treat the soil and how they ought to treat the hogs and the cattle and the horses, with the view of having good hogs, and good cattle and good horses. Now there is nothing in the constitution specially about horses, hogs or cattle, and if out of the public treasury at Washington, we can establish a department for the purpose, it does not seem to be a long stretch of logic to say that we have the power to spend the money in a bureau of research to tell how we can develop good men and good women."

As an example of what may be accomplished by governmental sanitary investigation, research, advice and supervision, the following mortality statistics from the U. S. census bureau for the years 1901 to 1905 may be of interest as showing the results in death rate on typhoid fever—an acknowledged preventable disease—in different countries where there is government supervision:

	Death rate per 100,000 Population per annum.
Belgium Empire	16.8
German Empire	7.6
Norway	5.2
Sweden	8.6
Switzerland	6.2
United Kingdom	11.5
Japan	11.6
New Zealand	7.9
Making an average of about	9.4

The United States for the same period has a death rate of 32.2.

Thus the annual death rate from typhoid fever of the U. S. for the period 1901-5 (32.2), was double that of such a densely settled country as Belgium (16.8), nearly three times that of Britain (11.5), over four times as large as that of the German Empire (7.6), five times as large as that of Switzerland, and six times as large as Norway. With an annual death rate from this disease of 25,000 in the United States, a conservative estimate would give 15,000 lives needlessly sacrificed. When we note that the average age at death of those is 28.8 years, when the wage earning capacity is at its maximum, the economic loss to the nation is something appalling. In North Dakota we have had the average rate from this disease, and as a consequence our full share of vital inefficiency and loss. In 1909 there were 87 deaths reported, and, as the death rate of typhoid is about 10 per cent of all cases, there were at least 1,000 cases in the state during the year. Assuming the following as an average conservative price for the cases, we have:

Physician	\$ 50.00
Nurse and medicine	75.00
Loss of earning power	75.00
Total	\$200.00

With 1,000 cases this would mean \$200,000, and this takes no cognizance of the 100 or more lives that went out or of the loss to home, society or state. A terrible price to pay for a preventable disease! You may add to this three times as many more who succumbed to tuberculosis, another preventable disease, and to this as many more who die of pneumonia and as many more who fall

a prey to what are known as infantile diseases such as measles, whooping cough, scarlet fever and diphtheria, and six times as many more who are victims of those diseases caused by errors or indiscretions of diet or lack of proper care during the first few years of life, and you have a death list of over half of the total. It is difficult to place a correct economic value on human life, but estimate it as conservatively as we may we are at once struck with its enormity. The brute force of the figures representing infantile mortality is impressive. In North Dakota one-fourth of all deaths that occurred in 1909 were those of infants under one year of age, and one-third are of children less than 5 years of age, and this agrees very nearly with the returns from the registration area of the United States. Since the hope of the state is in the child, we should give each one a fair chance to become an efficient unit in our civilization. Our compulsory education system aims at this but falls short by assuming that all are physically and mentally able to bear the same burden. The disastrous results of this system are to be found in the aggravation of existing physical, mental and moral defects, and in the production of new ones. The examination of school children wherever conducted, has shown a very large per cent to be victims of some inherited or acquired physical ailment that impairs their mentality and interferes more or less with their chances of "making good." It is furthermore found that these defects are in a large measure remediable. It would seem therefore, to be a part of wisdom, from educational, economic, humanitarian and patriotic standpoints, that these little ones whom we compel to live an artificial life for so many years, should be subjected to careful and competent supervision and placed on a plane of the highest attainable efficiency.

In the city of Minneapolis an examination was made of 2,800 pupils, of these 88 per cent were found to be defective, 57 per cent needing special treatment and 31 better nourishment; of 110 students of one of our state schools, 80 per cent were found with defective vision. In 1904 the vision of 7,845 school children was tested in thirty-seven towns of North Dakota. The number found with defective vision was 1,359 or 17 per cent. In Grand Forks schools where they have had yearly examinations we have the following results:

1903—1,310 pupils examined, 24 per cent had defective vision.

1904—1,396 pupils, examined, 16 per cent had defective vision.

1909—1,928 pupils examined, 13 per cent had defective vision.

A short time ago I sent out a questionnaire to the principals and superintendents of schools throughout the state asking for information relative to medical inspection. I received replies from schools having an enrollment of 17,335 pupils. Out of all received only one school with an enrollment of 800 had medical inspection—less than 5 per cent of the whole number. One school had inspection of pupils' eyes once a year by an oculist and a few re-

ported examinations by teachers. The question was asked, "What is your individual estimate of the value of medical inspection of school children." It was interesting to note how uniformly favorable their answers were. Here are a few:

"It improves the health and cleanliness of the pupils. It prevents contagious and infectious diseases. It improves attendance. It is a tonic for the homes."

"We have had several cases where children troubled with headaches and eye strain were backward in their work, transformed into different individuals by the treatment of a competent oculist."

"That it is due the pupil as his right. It would add to the efficiency of the individual and to the school as a whole."

"Pupils have improved very materially in school work after adenoids were removed."

"Eye and throat attention has often caused marked improvement in scholarship."

"The removal of physical defects improves the mentality of the child as well as the morals."

"Invaluable and absolutely necessary."

"I heartily favor such inspection and hope to see it generally introduced."

Of those who replied only one expressed himself adversely in this wise:

"Our homes are cleanly, people healthy, morals good. Inspection seems unnecessary."

The deduction that I draw from the foregoing data is that compulsory medical examination of school children should be as much a part of our educational system as compulsory attendance. With the two working hand in hand we should very soon, I believe, see an improvement in education, morality and public health that would be a revelation to us all.

There is another problem in our social pathology worthy of attention. We have an estimated population in our state of epileptics and feeble-minded of about 1,200. Of these about 150 are cared for at our state institution at Grafton, leaving 1,050 without any care or supervision outside of the ordinary rules of society. It has been found that this class are on the increase, and unless the state exercises its right to curtail in some way the production of the unfit there will ultimately result such a burden on charity and on society that they will be over-taxed. This is one of the conditions in which heredity plays an important part. In the cases admitted to our own institution 50 per cent with this as a causative agent can be directly traced. When we consider that the families of the feeble minded are nearly twice as numerous as are those of normal individuals, the far-reaching effect of this problem becomes obvious. Our duty to care for these unfortunates should

be coupled with our right to regulate their propagation by methods beyond the control of the affected individuals. All states have some restrictions as to marriage. A few have very stringent regulations. Michigan and Connecticut forbid the marriage of epileptics. Indiana extends the prohibition to all persons suffering from transmissible diseases of any sort and in 1907 provided that confirmed criminals, imbeciles, idiots and rapists be unsexed—surgically. Under this law about 1,000 have been sterilized to date. Oregon has defined a confirmed criminal as one who was serving his third term.

In North Dakota we have a law forbidding the marriage of whites and negroes. Would it not have been better had the restriction been placed upon the class of degenerates we have been considering?

Summing matters up I would suggest as remedies:

1. The prevention of marriage of defectives.
2. Custodial care of majority of cases.
3. Asexualization of selected cases.

Nor would I confine the restriction of marriages to the foregoing classes. I believe that those affected with the so-called social diseases should be debarred from the privileges of marriage. The fact that 40 per cent of all special surgical operations on women are directly or indirectly the result of infection from one of these diseases, and that the death of untold thousands of unborn or newly born infants and the life-long taint of disease upon children who do live, are due to another of these diseases, should be arguments enough, for the state to demand control. The man who approaches the marriage altar should be made to feel that he must do so with a clean bill of health or as the lawyers say, "come to court with clean hands." Once let it be realized that a physical standard will be demanded, and that knowledge would be more effective for morality among young men than preaching, teaching or moralizing.

To preventive medicine belongs without a doubt the place of honor in the battle against disease. A resume of the work done along this line reads more like a fairy tale than a calm recital of scientific facts. Rabies before Pasteur's time meant sure death to everyone infected; now it is sure cure to all who avail themselves of the proper prophylactic measure. Malta fever was once the terror of the Mediterranean, but is almost eradicated. Yellow fever, the scourge of our tropical and semi-tropical states, is nearly a thing of the past. Malaria, that sapped the vitality of large sections of our country, is no longer dreaded. The plague, that in past history decimated nations, is so nearly conquered that a case of it is a curiosity. Diphtheria, once our most fatal and most dreaded infantile disease, shorn of its terrors. Smallpox, that once had to its credit 10 per cent of all deaths, has now scarcely one to its record. Sections of the world like the Panama zone that

a few years ago were almost uninhabitable, can now be classed as health resorts, and all this has been accomplished within the memory of those now living. Surely this is a chapter in human achievement for human advancement and for human conservation that calls for our highest commendations. Stimulated by past successes, by a spirit of humanitarianism and by faith in the ultimate results, the amount of work that is being done for public health is enormous. Exhaustive scientific laboratory research, detailed clinic study, therapeutic experimentation, sociological and economic investigation, organization and co-ordination of health forces, a voluminous literature and widespread educative propaganda for the masses of the people, are all generously placed at its service, unlimited in amount and "without money and without price." Never in the history of the world has there been such a concerted movement, never before has a people met a foe so worthy of their steel, never before has there been so steady a retreat, although every inch of the ground has been stubbornly contested, and never before has there been better promise of an unconditional surrender of the enemy.

BOARDS OF HEALTH.

We have inherited from territorial days the nucleus of our general health laws. When they were enacted they no doubt met the conditions then existing reasonably well. Conditions, however, have changed very materially since statehood, and to meet in a measure those changes, at almost every legislature that has convened some new law affecting health matters has been enacted. The result, as might be expected, is a conglomeration of health laws that are ambiguous, contradictory and irreconcilable. There has been such a rapid advance made in sanitary matters and in preventive medicine during the past decade that much that was appropriate ten or more years ago are now obsolete. If we are to be up-to-date in public health matters we should have a health code that will enable us to act in accordance with the best thought of the day. I would recommend that a compilation of existing laws be made and arranged in such a manner as to be intelligible to the ordinary citizen—that all obsolete laws be rescinded—and such new ones be formulated and added as may be necessary to meet the special requirements of our state. Your secretary has under preparation such a compilation which in his opinion will meet the general demand and fulfill the object as stated. It is our purpose to present this for consideration at the next session of our legislature.

VITAL STATISTICS.

The vital statistics of a state are of so much importance that we wonder why so little attention has been paid to them. As our state grows older the need of them will be felt more and more.

There is no one but should have a record made of his or her birth—every one born into the world is surely entitled to this much and the same may be said of every death. Aside from the many questions of inheritance, law or equity that may hinge on a correct birth or death record, the results of preventive action cannot be intelligently measured without reliable statistics. They are the foundation on which is reared the whole fabric of preventive medicine, and as such it should be laid so broad and so deep that the superstructure will be one of stability and strength.

Our Vital Statistics Law, section 270, Session Laws of 1907, is all that could be desired as far as a piece of correct legislation is concerned. The one thing needing was an appropriation sufficient to put it into effect. However, with the small amount at our disposal we have been able to make a steady advance in registration from year to year, as may be noted from the records for June for the following years:

	1903	1904	1905	1906	1907	1908	1909	1910
Births	140	254	343	322	325	628	709	1,017
Deaths	27	125	115	106	112	243	251	366

and also from month to month as may be seen from the records of 1910:

	January	February	March	April	May	June	Total
Births	613	624	671	809	364	1,017	4,098
Deaths	214	208	222	291	253	366	1,554

But we have about reached the limit and unless there is some further provision made for pushing the project I fear we will reap very meager fruits for our past labor.

In the matter of reporting and recording contagious diseases there is much room for improvement. This is one of the questions that our present laws cover very inadequately. The new vital statistic law does not mention contagious nor infectious diseases and the provisions governing them are to be found scattered through a mass of other material, the various provisions being misleading and ambiguous. These scattered provisions should be compiled and rewritten in a manner that would leave not even a shadow of a doubt as to what was intended. This is something that is demanded as a necessary measure for the preservation of the health of the people, more especially in diseases that are liable to assume an epidemic form. I would strongly recommend that these matters be brought before the legislature for consideration.

TUBERCULOSIS.

This disease which has for centuries been one of the scourges of the human race, still holds the boards as one of the chief factors in public health that has to be reckoned with. Other diseases as for instance malaria and yellow fever, have more or less of a local setting, requiring special conditions, climatic or geographic, for their development. Tuberculosis, on the other hand, requires none of such. It is indeed the disease of the people in a larger and truer sense than can be affirmed of any other malady. All countries, all climes, all races, all kinds and conditions of men are subject to its ravages. The palatial residence of the rich and the simple home of the poor are alike its abode. It knocks at the door of the affluent and enters unbidden through the thresholds of the lowly. It thrives luxuriantly in the atmosphere of poverty and want and flourishes where surroundings are indicative of comfort and plenty. Wherever man builds his habitation, depresses his vitality by overwork or by debilitating excesses, lowers his powers of life by using insufficient or improper food, surrounds himself with the expectation of his fellows and deprives himself of the blessings of God's free air, there you will find it.

When Professor Robert Koch of Berlin gave to his professional brethren the discovery of the tubercle bacillus, he pressed the button that set in motion the sanitary machinery of the world. Since that time it has been engaging the attention of the civilized world in efforts to eradicate it. Societies, international, national, state and local, have been formed to study the disease in its various manifestations. The health forces of the world have been marshalled under the common flag of service for the common cause of humanity and against the common enemy of the race. As a result of this united action the death rate from consumption has been reduced during the past twenty years about twenty-five per cent. This is an encouraging exhibit and gives promise of better things to come. This is not a battle for physicians alone, no matter how well trained or efficient they may be. It is not for the agencies of government alone, no matter how well organized they may be. It is not for the people alone, no matter how enthusiastic or intelligent they may be, but as has been so well epitomized by Knopf: "To combat consumption as a disease of the masses successfully, requires the combined action of a wise government, well trained physicians and an intelligent people."

In North Dakota I believe our people are as intelligent as are any people on earth. Our physicians are as capable and as well trained as are any equal number of physicians in the world, and our government is as fully alive to our needs and as liberal in

its appropriations as is consistent with our resources. With these factors working harmoniously together it is my opinion that the death rate from tuberculosis in our state will be gradually reduced to a minimum. Already a good start has been made. The last legislature made an appropriation of \$10,000 for the purchase and improvement of a site for a state sanatorium for consumptive patients and a commission appointed to carry out the wishes of the people. This commission, after a careful investigation, purchased a site in the vicinity of Dunseith. It is a beautiful location on an elevated plateau, facing south, in one of the valleys that run into the Turtle Mountains. It is well protected from the north and west by the hills that surround it. The south borders on the shores of a lake. There is an abundance of natural spring water on the premises. It has been surveyed, and platted by a landscape gardener; roads have been laid out and made; trees planted, and the ground generally beautified. We feel confident that the next legislature will take such steps as may be necessary to erect a sanatorium for the care and cure of our tuberculous citizens.

The State Board of Health in connection with the North Dakota Anti-tuberculosis Association, has not been idle in the meantime. They have kept up an educative propaganda among the people, teaching the gospel of good health and especially emphasizing the doctrine that tuberculosis is a communicable disease, that it is preventable and that it is curable. In addition to the 1,500 bulletins sent out by this department every month, we have scattered broadcast among the people over 50,000 pieces of literature bearing on this and kindred subjects, and in addition to this, hundreds of pamphlets, "Directions for Living and Sleeping in the Open Air," have been supplied to those who required them. Lectures, demonstrations, exhibitions, etc., have been given from time to time and at various places throughout the state as opportunity might offer.

Last year the sale of Red Cross stamps was taken up and a gross amount of \$940.10 was realized. Part of this has been expended for anti-tuberculosis work, the balance to be used as needed. Next Christmas season they propose pushing the sale, and anticipate a revenue from this source of \$2,000. With this amount at our disposal much can be accomplished in spreading the glad tidings of health and hope to people less fortunate than ourselves.

Recognizing the power of the pulpit as a moulder of opinion, an effort was made to enlist all our ministers in the good work of enlightening their congregations on the subject of tuberculosis. We prepared a circular letter, a copy of which I enclose, and sent it to over 700 ministers of all denominations. Nearly 300 ministers responded and gave a service for the good of the cause. At a conservative estimate twenty-five thousand people attended and heard this gospel of good health preached to them.

After the services the people were supplied with anti-tuberculosis literature, which reached the home of as many more. This church attack is only a special part of the widespread campaign against the devastating disease, waged by schools, labor unions, women's clubs, commercial institutions, state legislatures, the press, etc., and the one sermon that is being preached is "that consumption is a communicable disease, that it can be prevented and that it can be cured by fresh air, sunshine, rest, wholesome food, and a life lived in community with nature and in conformity with her laws." The following is a copy of the letter which was sent to the clergymen and to which they responded so graciously:

Grand Forks, N. Dak., March 21, 1910.

My Dear Sir: As you may note from the enclosed circular letter, we are preparing for a Tuberculosis Rally on April 24, 1910. We are of the opinion that there is nothing inconsistent in asking churchmen to co-operate with us in this movement. The Great Teacher was also the Great Physician and he never missed an opportunity of bettering the physical condition of His people and of inculcating in their hearts the principles of health and hope. There is nothing in the simple statement of the facts concerning the disease and ways in which it can be prevented which would be disagreeable to any church congregation. On the contrary, the gospel of good health and the opportunity to "throw out the lifeline" to others less fortunate than ourselves should appeal to everyone as work for The Master.

Bespeaking your hearty co-operation in this movement, I am enclosing a sermon outline which may prove suggestive. If you would kindly inform me of your willingness to enter into this and of the approximate number of your congregation, I would be pleased to send you for free distribution leaflets containing helpful suggestions concerning the disease. I am,

Yours for good health,

(Signed) J. GRASSICK, M. D.

INFANTILE PARALYSIS.

This disease although not by any means a new one, has in the past few years assumed an importance by reason of its taking on an epidemic form and spreading over larger areas of country. It appears to be a disease that thrives best in temperate climates, only one outbreak of the disease being reported within the tropics, that of Cuba, which had an epidemic of 140 cases in 1909. This was supposed to have been imported from New York, where there was an epidemic of 2,500 cases. The rapidity with which it is increasing may be noted from the following list of recorded cases from 1880 to 1909:

Five-Year Periods	Epidemics	Cases
1880-1884	2	23
1885-1889	7	93
1890-1894	4	151
1895-1899	23	345
1900-1904	9	349
1905-1909	25	8,054

This shows an enormously increased prevalence in recent years and what is of more vital importance to us, of the cases reported during the past five years, approximately 5,000 have occurred in the United States and practically all within the years of 1907-1909. The Surgeon General of the Public Health and Marine Hospital service reports that there were at least 3,000 cases in 23 states in the year 1910. An analysis of a great number of cases show that the death rate is about 15 per cent, with perfect recoveries of about the same, leaving 70 per cent who are permanently disabled to a greater or less degree. This latter condition is where the most suffering and economic loss is entailed, and which conduces in no small degree in making this disease a most serious one. Epidemics of other diseases may be severe, but as a rule they leave no permanent after effects and are soon forgotten, but epidemics of poliomyelitis leave in their wake sad reminders of their presence—an army of cripples who will remain objects of sympathy or charity to the next generation. We have had in North Dakota about 100 cases of the disease during 1909, and approximately half as many more during 1910.

All epidemics in all countries point to it as being most prevalent in the hot and dry months of the year, July, August and Sep-

tember being the ones when the greatest number of cases occur. The winter months are almost entirely exempt. Its origin and dissemination have been surrounded with mystery, and these conditions have resulted in a lack of confidence in preventive measures and the magnification in the popular mind of the terror of the disease. This much, however, is known, that it is certainly due to a specific micro-organism which can be quite readily killed by the usual methods of disinfection. That this specific virus is contained in the different secretions of the body. That the disease can be given to others through respiratory tract, through the digestive tract and by direct inoculation. We also know that the disease follows a course similar to other acute infectious diseases. Acting on these known characteristics of the disease the State Board of Health has placed it on the list of communicable diseases which should be reported. It has also ordered that the following regulations be strictly adhered to until such time as we may have a more rational method of procedure. The preponderance of clinical evidence is to the effect that it is a contagious disease, and that it should be dealt with in a manner similar to others of a like character.

REGULATIONS.

In epidemic cerebral meningitis and anterior polio-myelitis the minimum period during which they shall be deemed infectious shall be fourteen days or until all the acute symptoms of the disease have subsided. Provided that in case of diseases mentioned in this section, if the patient be properly isolated in the home, the local health officer having charge of the cases may permit those who do not have the disease to leave the premises in order to attend to their regular duties except when such individuals are associated with children away from the quarantined house. Provided, further, that the health officer shall give notice to the public by placing placards with the name of the disease thereon in large plainly printed letters in conspicuous places on the outer wall of the house or building. The premises shall be disinfected before the placards are removed. If these regulations are not complied with to the satisfaction of the health officer the patients and other occupants of the house may be strictly quarantined.

(Signed) J. GRASSICK, M. D.,
Superintendent of Public Health.

STREAM POLLUTION.

The question of stream pollution is a live one. It is one that affects a great many of our people because of the fact that the stream is one of our natural water supplies. In our state our public water supplies are limited and are of such a nature that only a limited amount of impurities can be introduced into them with safety. As our state becomes more thickly settled the danger becomes greater and greater. Every portion of our commonwealth is up against the question of what to do with our sewage. Hitherto the rule has been to conduct it to the nearest stream and get rid of it as quickly and as easily as possible, in effect making our main waterways open sewers. This method, if there were no inhabitants down the stream who were dependent on it for their water supply, might work out satisfactorily, but unfortunately there are others to be thought of. There are various methods of sewage purification that are more or less practical and effective. They may be enumerated as broad irrigation, intermittent sand filtration, coarse grain filtration, chemical precipitation, septic tanks and sedimentation. Each of these depend very much for their efficiency on the local conditions. These should be carefully investigated by a competent engineer thoroughly experienced in that line of work. Local filtering material, quantity and character of the sewage, style of sewage system, topography of locality, distance from habitations, etc., must all be taken into account and receive due consideration. After giving due weight to all these features, it might then be possible to determine the most economical and efficient type of works for the place in question.

From observation and from the experience of older states I am firmly convinced that North Dakota must soon adopt practical measures having for their object the maintenance of pure public water supplies. I am further of the opinion that no city or corporation of any kind should be allowed to install a sewage disposal plant nor a sewage purification plant without first obtaining permission from the State Board of Health and not then until a careful examination had been made by a duly recognized sanitary engineer and his report with recommendations filed with the board. In this way only can we expect to have the public water supplies protected from sewage pollution.

The cities and towns on the Missouri river have had for many years an exceptionally pure water supply, but as the adjacent country is becoming more thickly settled and the discharge into the river of untreated human excreta permitted, they are beginning to feel this blot on our civilization ideals. The cities on the Red river have long felt it and have paid dearly in lives and money

for this breach of a plain sanitary law. Let us adopt some practical methods of protecting our people now rather than to wait until sickness and pecuniary loss render such action imperative. Remember that the two things of primary importance of any community are a pure water supply and proper disposal of sewage.

THE PUBLIC DRINKING CUP.

A general campaign is being waged against this common nuisance. It has been demonstrated that it is one of the factors in the spread of disease and its use being so universal its possibilities for harm are enormous. Especially is this true in schools and other places where people gather in great numbers. So general is the sentiment against their use that forty state boards of health agree that the public drinking cup should be abolished.

Nearly every one is aware of the fact that the mouth at all times contains a great many pathogenic organisms, such as germs of pneumonia, diphtheria, etc., and that these are deposited on the drinking vessel every time that it is used. The next user makes an interchange of bacteria by leaving some of his own and receiving some others in return and thus the vicious circle goes around until the cup that is used for any length of time must inevitably be so infectious as to be the constant medium of communication of such diseases. A number of states have had legislation enacted forbidding the use of the common drinking cup in all public places. Others have had regulations framed by state boards of health and published with the object of having this unsanitary custom abolished. We are of the opinion that a healthy public sentiment should be created before any law or regulation would be effective. Looking to this end we have conducted an educative campaign against the common drinking cup and we are pleased to report that it has been so effective that the nuisance has in many instances been replaced by individual drinking cups, bubbling fountains, faucets, etc. This has been especially true in schools.

A very effective campaign card which has done good work in this connection is the following:

CAUTION.

Dangerous and loathsome diseases such as
DIPHTHERIA, TUBERCULOSIS AND SYPHILIS

Are frequently communicated by the use of
PUBLIC DRINKING CUPS.

Protect yourself and those dependent upon you.

Provide yourself with an individual drinking cup and thus avoid the possibilities of contamination

By order of the State Board of Health.

I am strongly convinced that we have reached that stage in our development when we should use compulsory measures that the

public may be properly protected. I would recommend that proper legislation be enacted to enable the state board of health to prohibit the use of public drinking cups in the state of North Dakota.

BULLETINS.

Beginning with our connection with this department it has been our policy to issue at regular intervals bulletins on subjects pertaining to matters of public health. In our last biennial report we gave a list of twelve of these that had been issued. We found, however, that these did not fill the bill to our satisfaction and it was decided to issue monthly bulletins of eight pages, in pamphlet form. The first one was issued in November, 1908, and since that time no month has been missed. The project, although it entails a good deal of work and makes serious inroads on our limited appropriation, has more than fulfilled its mission. Fifteen hundred are printed every month and mailed to newspapers, legislators, doctors, embalmers and others. The matter as may be seen by an examination of the accompanying copies, is varied and covers a wide field. Special attention has been given those subjects that appeal to the masses of the people. It has been our aim to present the matter in a readable form as free from technicalities as possible, so that the general public might be reached.

The press of the state has contributed very generously in this educative propaganda. It is hard to find a periodical that does not devote more or less space to public health matters. Every month articles from the Bulletin are printed in many of our newspapers, and thus the gospel of good health reaches a great many of our people. We are especially grateful to them for their influence and help.

PUBLIC HEALTH LABORATORY.

The Public Health Laboratory must be acknowledged to be a part of the rational health machinery of our state and a very important one at that. Since it came into existence in 1907 it has more than fulfilled the anticipation of its most enthusiastic supporters. The demand for laboratory methods in the diagnosis of a great many of our diseases is one of the evolutions of our modern civilization. To meet the demand for quick and efficient service it has been necessary to create sub-stations at Bismarck and Minot.

The Laboratory is under the direct control of the University, although it works in harmony with the State Board of Health. I feel, however, that it would be better if there was in some way a closer bond of unity established between them. With the present incumbents at the head of each department, I see no occasion for friction, but it is easy to see that such a condition might very easily arise, and the results would in such a case be anything but satisfactory.

I have much pleasure in appending a report from Dr. Ruediger as director of the laboratory.

THE PUBLIC HEALTH LABORATORY.

The work of the Public Health Laboratory has had a phenomenal growth during the last two years. During the first year of its existence, there were received and examined 1,828 bacteriological and pathological specimens of various kinds. During the second year, ending June 30, 1909, there were received and examined 3,293 specimens; and during the third year, ending June 30, 1910, there were received and examined 4,699 specimens, making a total of 7,992 for the last two years.

Among these specimens may be mentioned 2,096 throat cultures, which were submitted for the diagnosis of diphtheria; 1,925 specimens of sputum, which were submitted for the diagnosis of tuberculosis; 1,234 samples of blood, which were submitted for the diagnosis of typhoid fever; 427 samples of water, which were submitted for analysis to determine whether or not the water is safe and suitable for drinking purposes; 783 samples of milk and cream, which were submitted for bacteriological and chemical analysis; and the remaining specimens were made up of pus and blood, urine, stomach contents, and pathological tissues. The samples of milk and cream were received almost entirely from the city of Grand Forks, as the laboratory has a special arrangement with the health department of Grand Forks to perform the work of milk inspection for said department.

The other specimens of bacteriological and pathological material and the samples of water, were received from practically every community in the state of North Dakota. Most of the bacteriological and pathological specimens are received only from the regularly licensed physicians of the state, and are submitted in conveyers prepared and sterilized at this laboratory. This rule is a very important one, as it is self-evident that a trustworthy examination cannot be made if the sample submitted for examination is not properly collected and transmitted. Water samples are accepted from both public supplies and private supplies, and are examined free of charge in all instances. We insist, however, upon having the samples submitted in properly sterilized conveyers, which are sent out by this laboratory; and upon having the bottles packed in ice during transit.

In addition to these routine analyses, the laboratory has also undertaken a number of special investigations, most of which are related to water and ice supplies of the state. During the two winters just past, we have made both bacteriological and chemical analyses of ice taken from the following sources:

Des Lacs Lake, near Kenmare; Forest River, near Gilby; Goose River, near Hillsboro; Missouri river, near Bismarck; Mouse river, near Minot; Ottertail river, near Breckenridge, Minnesota; Park river; near Grafton; Red river, above Fargo; Red river, above Grand Forks; Red river, below Grand Forks; Red Lake river, above East Grand Forks, Minnesota; Rush lake; Turtle river, at Larimore, and a small lake which furnishes the supply for Milton and Langdon. In all of these instances, samples of the water were collected from under the ice and submitted for analysis at the same time.

These analyses show clearly that the water undergoes a very pronounced degree of purification during freezing. In many instances, the melted ice gave us a water far superior to that obtained by subjecting the water to sand filtration. Not only is there a very decided decrease in the number of bacteria, but the mineral constituent also are almost entirely absent from the ice. It must be pointed out, however, that this pronounced degree of purification will not take place if there is much disturbance in the water when it is freezing. Evidence of this can often be seen in the appearance of dark streaks, running through the block of ice. Ice having these dark streaks through it should not be used for cooling drinking water, by placing it directly into the water.

An exhaustive study of the self purification of Red Lake river and Red river was made by the laboratory during the last two years. This study has brought out the fact that the pathogenic bacteria, entering the river with sewage, will survive from three to four times as long during the winter months. This is an important fact from a practical point of view, and explains why

some of our northern cities, where sewage polluted water is used in the water works systems, are more frequently troubled with outbreaks of typhoid fever during the winter months.

The laboratory also made a special investigation of the water supply of Grand Forks, and in the spring of 1910 a very complete test was made of the bacteriological efficiency of the new sand filter installed in the city of Minot.

A complete report of all of these special investigations may be found in the special report of this laboratory to the governor.

(Signed) GUSTAV F. RUEDIGER, M. D.,
Director Public Health Laboratory, University of North Dakota.

SANITATION OF BARBER SHOPS, ETC.

(Senate Bill No. 271, Leutz, 1909.)

Be It Enacted by the Legislative Assembly of North Dakota:

Section 1. Barber's Tools Disinfected.) Registered barbers or barber apprentices, and all persons engaged in hair dressing and manicuring, must disinfect all tools used in the performance of their profession before they are brought into direct contact with the person of any of their customers. This disinfection must be carried on in a manner approved by the Board of Health of the state of North Dakota.

Sec. 2. Violation of This Act, How Punished.) Any violation of this act shall be punished by a fine of not less than twenty-five dollars nor more than two hundred dollars.

Approved, March 15, 1909.

REGULATIONS.

1. Mugs, shaving brushes, razors, scissors, clippers, pincers, files, needles, knives, the cup or pad of vibrating or massage machines and all other tools or appliances used in barber shops, hair dressing or manicuring parlors shall be sterilized by boiling or by immersion in alcohol of at least 60 per cent strength, formaldehyde solution of at least 10 per cent, lysol solution of at least 5 per cent, formaldehyde gas, or by other recognized methods approved by the board of health having jurisdiction, after each separate use. Combs and brushes shall be cleaned with soap and water at least once daily.

2. Clean towels shall be used for each person served. Towels shall not be used for more than one person until laundered.

3. Alum or other styptic or cosmetic shall be applied only on a clean towel or cloth or other aseptic appliance.

4. The use of powder puffs and sponges is prohibited.

5. Every barber shall thoroughly cleanse his hands immediately before serving each customer.

6. All tools or instruments, brushes and combs, used by barbers, hair dressers or manicures, either inside or outside their shops, in serving any person suffering from infectious or contagious diseases, or in serving any person who may have an eruption of the face or scalp, or on a corpse, are required to be thoroughly and efficiently sterilized immediately after using the same.

7. These rules and regulations shall be conspicuously displayed in each barber shop and in each manicuring and hair dressing parlor in the state of North Dakota.

8. The State Board of Health authorizes and directs that local health officers shall be charged with the inspection of all barber shops and all manicuring and hair dressing parlors in their respective jurisdictions and with the enforcement of the law, filing complaint with the state's attorney of all violations of these regulations, and sending a copy of such complaint to the secretary of the State Board of Health.

By order of the State Board of Health of North Dakota.

J. GRASSICK, M. D.
Secretary.

The above is a copy of a poster that was prepared by the State Board of Health and sent to each county health officer in the state, with instructions to supply a copy of the same to each barber shop or other place of business designated in the act within their respective jurisdictions.

VITAL STATISTICS.

Chapter 270, Session Laws of 1907. -

An act to provide for the immediate registration of all births and deaths throughout the state of North Dakota by means of certificates of births and deaths, and burial or removal permits; to establish a bureau of vital statistics at the capitol of the state; and to insure the thorough organization and efficiency of the registration of vital statistics throughout the state on the standard forms recommended by the United States bureau of census and the American Public Health association; and providing certain penalties.

Be It Enacted by the Legislative Assembly of the State of North Dakota:

Section 1. Bureau of Vital Statistics. State Registrar.) For the complete and proper registration of births and deaths, for legal, sanitary and statistical purposes, there shall be, and hereby is, created and established a state bureau of vital statistics, to be under the immediate superintendence of the state board of health, and the secretary of said board shall have general supervision over the bureau which is hereby authorized to be established by the board and for the purposes of this act he shall be ex-officio state registrar of vital statistics.

Section 2. Deputy Registrar.) The state registrar may employ such clerical and other assistants as are necessary for the proper performance of the duties of the office, and fix compensation within the amount appropriated therefor by the legislature. He shall designate, in writing, one of his assistants, who shall possess the powers and perform the duties of the state registrar during his absence, illness or disability, or during a vacancy in the office, and he is hereby empowered to make, promulgate and enforce such rules and regulations as he may consider necessary to carry out the provisions of this act. Suitable apartments shall be provided by the custodian of the capitol, in the state capitol at Bismarck, for the bureau of vital statistics, which shall be properly equipped with fireproof vault and filing cases for the safe and permanent preservation of all official records made and returned under this act.

Section 3. Registration Districts.) For the purposes of this act the state shall be divided into registration districts as follows: Each incorporated village and city and each township, exclusive of any incorporated village or city, shall constitute a primary registration district.

Section 4. Local Registrars, Duties of. Sub-Registrars.) The clerk of each township, village or city shall be the local registrar in and for the township, village or city of which he is clerk, and he shall perform all the duties of the local registrar as hereinafter provided, and he shall immediately appoint in writing, a deputy, who shall be authorized to act in his stead in case of absence, illness or disability; provided, that in unorganized townships the state registrar may appoint suitable persons as local registrars, and when it may appear necessary for the convenience of the people in any township, the local registrar is hereby authorized, with the approval of the state registrar, to appoint one or more suitable and proper persons to act as sub-registrars, who shall be authorized to receive certificates and to issue burial or removal permits in and for such portions of the township as may be designated, and each sub-register shall note the date each certificate was filed, over his signature, and forward all certificates to the registrar of the township within ten days, and in all cases before the third day of the following month; provided, that all sub-registrars shall be subject to the supervision and control of the state registrar, and may be by him removed for neglect or failure to perform their duties in accordance with the provisions of this act, or the rules and regulations of the state registrar, and they shall be liable to the same penalties for the neglect of duties as local registrar.

Section 5. Registration of Births.) All births that occur in the state shall be immediately registered in the districts in which they occur, as hereinafter provided.

Section 6. Regulation of Burials.) The body of any person whose death occurs in the state shall not be interred, deposited in a vault or tomb, cremated or otherwise disposed of, or removed from or into any registration district, until a permit for burial or removal shall have been properly issued by the registrar of the registration district in which the death occurs, and no such burial or removal permit shall be issued by any registrar until a complete and satisfactory certificate and return of death has been filed with him, as hereinafter provided; provided, that in case of any death outside of the state, where the body is accompanied by a removal or transit permit issued in accordance with the (law) and the health regulations in force when the death occurred, such removal or transit permit may be accepted as of the same authority as a permit from the local registrar.

Section 7. Still-born Children to Be Registered.) Still-born children, or those dead at birth, shall be registered as births and also as deaths, and a certificate of both the birth and the death shall be filed with the local registrar in the usual form and manner, the certificate of birth to contain, in place of the name of the child, the words "still birth." The medical certificate of the cause of death shall be signed by the attending physician, and shall state the cause of death as "still-born," with the cause of the still birth, if known; whether a premature birth, and if born prematurely, the period of uterogestation in months, if known, and a burial or removal permit in the usual form shall be required.

Section 8. Death Certificate, Form of.) The certificate of the death shall be of the standard form recommended by the bureau of the census of the American Health association, and shall contain the following items:

1. Place of death, including state, county, township or town, city or village. If in a city, the ward, street and house number. If in a hospital or other institution, the name of the same to be given instead of the street and house number.

2. Full name of decedent. If an unnamed child, the surname, preceded by "unnamed."

3. Sex.

4. Color or race, as white, black (negro or negro descent), Indian, Chinese, Japanese or other.

5. Conjugal condition, as single, married, widowed or divorced.

6. Date of birth, including the year, month and day.

7. Age in years, months and days.

8. Place of birth, state or foreign country.

9. Name of father.

10. Birthplace of father, state or foreign country.

11. Maiden name of mother.

12. Birthplace of mother, state or foreign country.

13. Occupation; the occupation to be reported of any person who had any remunerative employment, women as well as men.

14. Signature and address and informant.

15. Date of death, including the year, month and day.

16. Statement of medical attendance on decedent, fact and time of death, including the time last seen alive.

17. Cause of death, including the primary and immediate causes and contributory causes or complications, if any, and the duration of each.

18. Signature and address of physician or official making the medical certificate.

19. Special information concerning deaths in hospitals and institutions, and of persons dying away from home, including the former or usual residence, length of time at place of death, and place where the disease was contracted.

20. Place of burial or removal.

21. Date of burial or removal.

22. Signature and address of undertaker.

23. Official signature of registrar, with date when certificate was filed and registered number.

The personal and statistical particulars (items 1 to 13) shall be authenticated by the signature of the informant, who may be any competent person acquainted with the facts. The statement of the facts relating to the disposition of the body shall be signed by the undertaker or person acting as such. The medical certificate shall be made and signed by the physician, if any, last in attendance on the deceased, who shall specify the time in attendance, the time he last saw the deceased alive, and the hour of the day at which death occurred; and he shall further state the cause of death so as to show the course of disease or sequence of causes resulting in death, giving the primary and immediate causes, and also the contributory causes, if any, and the duration of each. Indefinite and unsatisfactory terms indicating only symptoms of disease or conditions resulting from disease will not be held sufficient for issuing a burial or removal permit, and any certificate containing only such terms, as defined by the state registrar, shall be returned to the physician for correction and definition. Causes of death which may be the result of either disease or violence, shall be carefully defined, and if from violence, its nature shall be stated, and whether accidental, suicidal or homicidal. And in case of deaths in hospitals, institutions or away from home, the physician shall furnish the information required under this head (item 19) and shall state where, in his opinion, the disease was contracted and the cause of death and all other facts required shall in all cases be stated in accordance with the rules and regulations of the state registrar.

Section 9. Deaths without Medical Attendance. Duty of Undertaker.) In case of any death occurring without medical attendance it shall be the duty of the undertaker to notify the registrar of such death, and when so notified the registrar shall inform the local health officer and refer the case to him for immediate investigation and certification, prior to issuing the permit; provided, that when the local health officer is not a qualified physician, or when there is no such official, and in such cases only, the registrar is authorized to make the certificate and return from the statement of relatives or other persons having adequate knowledge of the facts; provided, further, that if the circumstances of the case render it probable that the death was caused by unlawful or suspicious means, the registrar shall then refer the case to the coroner for his investigation and certification.

Section 10. Duties of Undertaker.) The undertaker or person acting as undertaker, shall be responsible for obtaining and filing the certificate of death with the registrar and securing a burial or removal permit prior to any disposition of the body. He shall obtain the personal and statistical particulars required from the person best qualified to supply them, over the signature and address of his informant. He shall then present the certificate to the attending physician, if any, or to the health officer or coroner, as directed by the registrar, for the medical certificate of the cause of death, and other particulars necessary to complete the records, as specified in section 8, and he shall then state the facts re-

quired relative to the date and place of burial, over his signature and with his address, and present the completed certificate to the registrar within the time limit, if any, designated by the local board of health for the issuance of a burial or removal permit. The undertaker shall deliver the burial permit to the sexton or person in charge of the place of burial before interring the body, or attach the removal permit to the box containing the corpse, when shipped by any transportation company, to accompany same to destination when it shall be accepted by the sexton as authority for interment of the body.

Section 11. Burial Permit, Form of.) If the interment or other disposition of the body is to be made in the registration district in which the death occurred, the wording of the burial permit may be limited to a statement by the registrar, and over his signature, that a satisfactory certificate of death having been filed with him as required by law, permission is granted to inter, remove or otherwise dispose of the body of the deceased, stating the name, age, sex, cause of death, and other necessary details upon the form prescribed by the state registrar. But in case the interment or other disposition of the body is to be made in some registration district other than that in which the death occurred, a complete copy of the certificate of death shall be attached to and make a part of the permit.

Section 12. Duty of Sextons. Record.) No sexton or person in charge of any premises in which interments are made shall inter or permit the interment of any body unless it is accompanied by a burial, removal or transit permit as herein provided, and each sexton or person in charge of any burial ground shall indorse upon the permit the date of interment over his signature, and shall return all permits, so indorsed, to the local registrar of his district within ten days from the date of interment, or within the time (limited) by the local board of health. He shall also keep a record of all interments made in the premises under his charge, stating the name of the deceased person, place of death, date of burial, and name and address of the undertaker, which record shall at all times be open to public inspection.

Section 13. Certificate of Birth, Filed When and by Whom.) It shall be the duty of the attending physician or midwife to file the certificate of birth properly and completely filled out, giving all particulars required by this act, with the local registrar of the district in which the birth occurred, within three days after the date of birth, and if there be no attending physician or midwife, then it shall be the duty of the father of the child, householder or owner of the premises, manager or superintendent of public or private institution in which the birth occurred, to file said certificate of birth with the local registrar within three days after the birth.

Section 14. Form of Certificate.) The certificate of birth shall be of the standard form recommended by the bureau of the census and shall contain the following items:

1. Place of birth, including state, township or town, village or city. If in a city, the ward, street and house number. If in a hospital or other institution the name of the same to be given instead of the street and house number.

2. The full name of child. If the child dies without a name before the certificate is filed, enter the words "died unnamed." If the living child has not been named at the date of filing the certificate of birth, the space for "full name of child" is to be left blank, to be filled out subsequently by a supplemental report as hereinafter provided.

3. Sex of child.

4. Whether a twin, triplet or other plural birth. A separate certificate shall be required for each child of plural birth, giving number of child in order of birth.

5. Whether legitimate or illegitimate.
6. Full name of father.
7. Residence of father.
8. Color or race of father.
9. Birthplace of father.
10. Age of father at last birthday, in years.
11. Occupation of father.
12. Maiden name of mother, in full.
13. Residence of mother.
14. Color or race of mother.
15. Birthplace of mother.
16. Age of mother at last birthday, in years.
17. Occupation of mother.
18. Number of child of this mother, and number of children of this mother now living.
19. Certificate of attending physician or midwife as to attendance at birth, including statement of year, month, day and hour of birth, and whether the child was dead or alive at birth. This certificate shall be signed by the attending physician or midwife in attendance, then the father of the child, householder or owner of the premises, or manager or superintendent of public or private institution, or other competent person whose duty it shall become to file the certificate of birth as required by section 13 of this act, shall draw a line through the words "I hereby certify that I attended the birth of above child," and shall write in lieu thereof the word "no physician or midwife," filling out the remainder of the certificate in regard to the year, month, day and hour of birth, and signing the certificate as father, householder, owner of premises, manager or superintendent of institution, as the case may be, with his address.
20. Exact date of filing in office of local registrar, attested by his official signature and registered number of birth, as hereinafter provided.

All certificates, either of birth or death, shall be written legibly in unfading black ink, and no certificate shall be held to be complete and correct that does not supply all of the items of information called for therein or satisfactory account of their omission.

Section 15. Supplemental Report Giving Name of Child.) When any certificate of birth of a living child is presented without statement of the given name, then the local registrar shall make out and deliver to the informant a special blank for the supplemental report of the given name of the child, which shall be filled out as directed, and returned to the registrar as soon as the child shall be named. The original certificate of birth shall not be considered complete until the supplemental report is filed or the blank returned with the statement "died unnamed."

Section 16. Physicians, Midwives and Undertakers to Be Registered.) Every physician, midwife and undertaker shall, without delay, register his or her name, address or occupation with the local register of the district in which he or she resides, or may hereafter establish a residence, and shall thereupon be supplied by the local registrar with a copy of this act, together with such rules and regulations as may be prepared by the state registrar relative to its enforcement. Within thirty days after the close of each calendar year each local registrar shall make a return to the state registrar of all physicians and midwives who have been registered in his district during the whole or any part of the preceding calendar year, and for carrying names for payment for certificates of birth filed

the state registrar shall not include any physicians or midwives who have not complied with the requirements of this section; provided, that no fee or other compensation shall be charged by local registrars to physicians, midwives or undertakers for registering their names under this section, or making returns thereof to the state registrar.

Section 17. Hospitals to Keep Record.) All superintendents or managers or other persons in charge of hospitals, lying-in or other institutions, public or private, to which persons resort for treatment of disease, confinement or are committed by process of law, are hereby required to make a record of all the personal and statistical particulars relative to the inmates in their institutions at the date of approval of this act, that are required in the form of certificate herein provided for, as directed by the state registrar, and thereafter such records shall be by them made for all future inmates at the time of admission, and in case of persons admitted or committed for medical treatment of disease the physician in charge shall specify for entry in the record, the nature of the disease, and where, in his opinion, it was contracted. The personal particulars and information required by this section shall be obtained from the individual himself, if it is practicable to do so, and when they cannot be so obtained, they shall be secured in as complete a manner as possible from the relatives, friends or other persons acquainted with the facts.

Section 18. Blanks and Forms Furnished by State Registrar.) The state registrar shall prepare, print and supply to all registrars all blanks and forms used in registering, recording and preserving the returns, or in otherwise carrying out the purposes of this act, and shall prepare and issue such detailed instruction as may be required to secure the uniform observance of its provisions and the maintenance of a perfect system of registration, and no other blanks shall be used than those supplied by the state registrar. He shall carefully examine the certificates received monthly from the local registrars, and if any such are incomplete or unsatisfactory, he shall require such further information to be furnished as may be necessary to make the record complete and satisfactory, and all physicians, midwives, informants or undertakers connected with any case, and all other persons having knowledge of the facts are hereby required to furnish such information as they may possess regarding any birth or death, upon demand of the state registrar, in person, by mail, or through the local registrar. He shall further arrange, bind and permanently preserve the certificates in a systematic manner, and shall prepare and maintain a comprehensive and continuous card index of all births and deaths registered, the card to show the name of child or deceased, place and date of birth or death, number of certificate and the volume in which it is contained. He shall inform all registrars what diseases are to be considered as infectious, contagious, or communicable and dangerous to the public health, as decided by the state board of health, in order that when deaths occur from such diseases proper precautions may be taken to prevent spreading of dangerous diseases.

Section 19. Local Registrars to Correct Returns.) It shall be the duty of the local registrar to supply blank forms of certificates to such persons as require them, and he shall carefully examine each certificate of birth or death when presented for record to see that it has been made out in accordance with the provisions of this act and the instructions of the state registrar, and if any certificate of death is incomplete or unsatisfactory, it shall be his duty to call attention to the defects in the return and to withhold issuing the burial or removal permit until they are corrected. If the certificate of death is properly executed and complete, he shall then issue a burial or removal permit to the undertaker; provided, that in case the death occurred from some disease that is held by the state board of health to be infectious, contagious or communicable

and dangerous to the public health, no permit for the removal or other disposition of the body shall be granted by the registrar except under such conditions as may be prescribed by the state and local boards of health. If a certificate of birth is incomplete he shall immediately notify the informant and require him to supply the missing items if they can be obtained. He shall then number consecutively the certificates of birth and of death in two separate series, beginning with "number one," for the first birth, and the first death in each calendar year, and sign his name as registrar in attest of the date of filing in his office. He shall also make a complete and accurate copy of each birth and death certificate registered by him, upon a form identical with the original certificate, to be filed and permanently preserved in his office as the local record of such death, in such manner as directed by the state registrar, and he shall on the fifth day of each month, transmit to the state registrar all original certificates registered by him during the preceding months, and if no births and no deaths occur in any month he shall, on the fifth day of the following month, report that fact to the state registrar in such manner as the state registrar shall direct.

Section 20. Fees of Registrars.) Each local registrar shall be entitled to be paid the sum of twenty-five cents for each birth and each death certificate properly and completely made out and registered with him, and correctly copied and duly returned by him to the state registrar, as required by this act; provided, that in cities in which the city clerk or health officer, acting as registrar, receives a fixed salary in lieu of fees, no further compensation shall be paid for the duties required by this act. In case no births or no deaths were registered during any month, the local registrar shall be entitled to be paid the sum of twenty-five cents for each report to that effect promptly made in accordance with the directions of the state registrar. All amounts payable to registrars under provisions of this section shall be paid by the county in which the registration districts are located upon certification by the state registrar, and the state registrar shall annually certify to the auditors of the several counties the number of births and deaths registered with the names of local registrars and the amounts due each at the rates fixed herein.

Section 21. Certified Copies of Record of Births or Deaths, Fees for.) The state registrar shall, upon request, furnish any applicant a certified copy of the record of any birth or death registered under the provisions of this act, for the making and certification of which he shall be entitled to a fee of fifty cents to be paid by the applicant, and any such copy of the record of a birth or death, when properly certified by the state registrar to be a true copy thereof, shall be prima facie evidence in all courts and places of the facts therein stated. For any search of the files and records, when no certified copy is made, the state registrar shall be entitled to a fee of fifty cents for each hour or fractional hour of time of search, to be paid by the applicant, and the state registrar shall keep a true and correct account of all fees by him received under these provisions, and turn the same over to the state treasurer.

Section 22. Penalty for Failure to Comply with Law.) If any physician who was in medical attendance upon any deceased person at the time of death shall neglect or refuse to make out and deliver to the undertaker, sexton or other person in charge of the interment, removal or other disposition of the body, upon request, the medical certificate of cause of death hereinbefore provided for, he shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than five dollars nor more than fifty dollars, and if any physician shall wilfully or knowingly make a false certificate of the cause of death in any case, he shall be deemed guilty of a misdemeanor and upon conviction thereof, shall be fined not less than fifty dollars nor more than two hundred dol-

lars, and any physician or midwife in attendance upon a case of confinement, or any other person charged with responsibility for reporting births, in the order named in section 13 of this act, who shall neglect or refuse to file a proper certificate of birth with the local registrar within the time required by this act, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than five dollars nor more than fifty dollars. If any undertaker, sexton or other person acting as undertaker, shall inter, remove or otherwise dispose of the body of any deceased person without having received a burial or removal permit as herein provided, he shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than twenty dollars nor more than one hundred dollars. Any registrar, deputy registrar, or sub-registrar who shall neglect or fail to enforce the provisions of this act in his district or shall neglect or refuse to perform any of the duties imposed upon him by this act, or by the instructions and directions of the state registrar, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than ten dollars nor more than one hundred dollars. Any person who shall wilfully alter any certificate of birth or death, or the copy of any certificate of birth or death, on file in the office of the local registrar, shall be deemed guilty of a misdemeanor and, upon conviction thereof shall be fined not less than ten dollars nor more than one hundred dollars or be imprisoned in the county jail not exceeding sixty days, or suffer both fine and imprisonment in the discretion of the court. Any other person or persons who shall violate any of the provisions of this act, or shall wilfully neglect or refuse to perform any duties imposed upon them by the provisions of this act, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than five dollars nor more than one hundred dollars. Any transportation company or common carrier transporting or carrying, or accepting through its agents or employes for transportation or carriage, the body of any deceased person without an accompanying permit, issued in accordance with the provisions of this act, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than fifty dollars, nor more than two hundred dollars; provided, that in case the death occurred outside the state and the body is accompanied by a certificate of death, burial or removal, or transit permit, issued in accordance with the law or board of health regulations in force where the death occurred, such death certificate, burial, or removal, or transit permit may be held to authorize the transportation or carriage of the body into or through the state.

Section 23. Enforcement of Law, Who Charged with.) Local registrars are hereby charged with strict and thorough enforcement of the provisions of this act in their districts, under the provision and direction of the state registrar. They shall make an immediate report to the state registrar of any violation of this law coming to their notice by observation or upon complaint of any person, or otherwise. The state registrar is hereby charged with the thorough and efficient execution of the provisions of this act in every part of the state, and with supervisory powers over local registrars to the end that all of these requirements shall be uniformly complied with. He shall have authority to investigate cases of irregularity or violation of law, personally or by accredited representative, and all registrars shall aid him, upon request, in such investigation. When he shall deem it necessary, he shall report cases of violation of any of the provisions of this act to the prosecuting attorney or official of the proper county or municipality, with a statement of the facts and circumstances, and when any such case is reported to them by the state registrar, all prosecuting attorneys, or officials acting in such capacity, shall forthwith initiate and promptly follow up the

necessary court proceedings against the parties responsible for the alleged violations of law, and upon request of the state registrar the attorney general shall likewise assist in the enforcement of the provisions of this act.

Section 24. County Auditor to Furnish Names of Township Clerks.) It is hereby made the duty of each county auditor to furnish, after each township election, the name of the clerk of each organized civil township within his county, with his postoffice address, to the state registrar of vital statistics; and any auditor who shall wilfully neglect or refuse to furnish such names shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than ten dollars nor more than fifty dollars.

Section 25. Repeal.) All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Approved March 19, 1907.

REPORTS FROM COUNTY AND CITY HEALTH OFFICERS.

Believing that a complete biennial report of the State Board of Health should include an account of the measures taken each year by the various local boards of health—county and city—for the promotion of the health of the communities under their respective supervision or control, the secretary has solicited replies from the several health officers in answer to questions proposed in a circular letter sent for that purpose. A perusal of these reports will at once strike the most casual observer that there is a wide difference in the efficiency of these organizations. As stated in our last report: "The moral and material influence that a faithful and efficient health officer is capable of exerting in a community can hardly be overestimated. It is therefore of the first importance, if the best work is to be done, that these positions of trust be given to men who are qualified and who take a keen and lively interest in the work of the office." My experience has only tended to emphasize these sentiments.

On the first days of January, 1909 and 1910, I have written a letter to the county commissioners of the various counties calling their attention to this very important matter, and have requested them to use their best judgment in their appointments of county health officers. A number of counties have acted on these suggestions and have made appointments that are eminently satisfactory. It will be seen, however, that there is still room for improvement in a great many instances. I am of the opinion that the service could be improved by giving the superintendent of public health power to dismiss a county or city health officer who did not comply with the laws and regulations relating to his office. Every health officer should be made to feel that a reasonable compliance with his duties would be demanded. No one has a right to accept a position of trust and responsibility unless he intends to comply with the obligation that it entails. I am aware that the present fees that are allowed to health officers are very far from being high enough and I would strongly urge that this part of our law be changed. There is no department of our public service where greater returns for the money invested would be received than a wise and liberal policy along these lines. We should not lose sight of the fact that the health of our people is our greatest asset and any reasonable expenditure that would conserve the vitality of the people of our state would be economy indeed. A health officer who neglects his own work for the good of the public—and this condition confronts every one—is not only

entitled to the gratitude of the people, but he should be paid a reasonable amount for time and services rendered. This is only a fair and reasonable proposition and a compliance with it would do much to raise the efficiency of our local boards of health to a standard that would give larger returns in work and service than has heretofore been thought possible.

LIST OF COUNTY HEALTH OFFICERS IN NORTH DAKOTA.

County	Name and address
Adams	John G. Johns, M. D., Hettinger
Barnes	J. VanHouten, M. D., Valley City
Benson	John Crawford, M. D., Esmond
Billings	H. B. Musens, M. D., Beach
Bottineau	M. A. Stewart, M. D., Omemee
Bowman	H. J. R. Lindsay, M. D., Scranton
Burleigh	A. M. Brandt, M. D., Bismarck
Cass	G. A. Carpenter, M. D., Fargo
Cavalier	W. W. McQueen, M. D., Langdon
Dickey	Roy Lynde, M. D., Ellendale
Dunn	S. Bailey, M. D., Bailey
Eddy	Charles McLachlan, M. D., New Rockford
Emmons	R. R. Hogue, M. D., Linton
Foster	J. Ross McKenzie, M. D., Carrington
Grand Forks	H. H. Healy, M. D., Grand Forks
Griggs	L. Almklov, M. D., Cooperstown
Hettinger	F. E. Redmon, M. D., Mott
Kidder	T. S. Pryse, M. D., Dawson
LaMoure	G. A. Ribble, M. D., LaMoure
Logan	G. A. Mathews, M. D., Napoleon
McHenry	W. K. Jacoby, M. D., Towner
McIntosh	E. H. Maercklein, M. D., Ashley
McKenzie	U. G. Morris, M. D., Schafer
McLean	C. G. Forbes, M. D., Washburn
Mercer	L. G. Eastman, M. D., Stanton
Morton	M. Kranz, M. D., Mandan
Mountrail	M. E. Trainor, M. D., Stanley
Nelson	Ejnar Lohrbauer, M. D., Lakota
Oliver	H. A. Householder, M. D., Center
Pembina	C. H. Harris, M. D., Pembina
Pierce	A. M. Call, M. D., Rugby
Ramsey	W. F. Sihler, M. D., Devils Lake
Ransom	A. G. Patterson, M. D., Lisbon
Richland	R. H. Devine, M. D., Wahpeton
Rolette	J. P. Widmeyer, M. D., Rolla
Sargent	W. W. King, M. D., Milnor
Sheridan	Hugo Neukamp, M. D., McClusky
Stark	H. A. Davis, M. D., Dickinson
Steele	C. B. Harwood, M. D., Hope

County	Name and address
Stutsman	H. K. Wink, M. D., Jamestown
Towner	F. J. Roberts, M. D., Cando
Traill	O. A. Knutson, M. D., Buxton
Walsh	M. Halldorrson, M. D., Park River
Ward	A. J. McCannel, M. D., Minot
Wells	Per Oyen, M. D., Fessenden
Williams	H. C. Windell, M. D., Williston

REPORTS FROM COUNTY AND CITY HEALTH OFFICERS.

Wishing to present a comprehensive and detailed report from different parts of the state as to the sanitary conditions existing therein, I prepared and sent to each health officer, county and city, a circular letter, copies of which I insert, calling for information along special lines. The answers received are interesting and instructive and reflect in general terms the views of the several health officers as to the conditions existing within their several jurisdictions. An analysis of these answers will be given more fully in another part of this report.

Grand Forks, N. Dak., July 20, 1910.

Superintendent County Board of Health.

Dear Doctor: I have in preparation, as required by law, my report to the governor of our state, for the biennial period ending June 30, 1910, and would be pleased to have from you a resume of the sanitary conditions of your county to be incorporated therein.

Would you kindly answer the following questions as fully as possible and send to me by August 1st.

First. What conditions, natural or acquired, detrimental to public health exist in your county? What remedies would you suggest?

Second. What complaints have been made to you in reference to unsanitary conditions? How have they been disposed of?

Third. To what extent is stream pollution with sewerage, etc., practiced in your county?

Fourth. Have many cases of disease been traced to stream pollution? Give details.

Fifth. What control remedies would you suggest?

Sixth. Have you noticed any increase or decrease in typhoid fever, smallpox, diphtheria, scarlet fever or consumption? Give apparent causes in each case.

Seventh. How many cases of "infantile paralysis" have come under your notice during the past season?

Eighth. From experience and observation have you deduced any theories as to its causation, infectiousness, prevention or control?

Ninth. What defects do you note in our present health laws?

Tenth. What changes would you recommend?

Thanking you for a prompt reply and for any suggestions you may feel disposed to make, I am

Yours respectfully,

(Signed J. GRASSICK, M. D.,
Secretary State Board of Health.

Grand Forks, N. Dak., July 20, 1910.

City Health Officer.

Dear Doctor: In conformity with law I have now under preparation my report to the governor of our state for the biennial period ending June 30, 1910. That your city may be properly represented, I would ask you to give me the following information:

First. What improvements have been made in the sanitary conditions of your city during the past period?

Second. What is the source of your city's water supply? Is it satisfactory?

Third. What methods, if any, are employed for its purification? Are they satisfactory?

Fourth. What methods are employed for the disposal of sewerage?

Fifth. Is stream pollution by sewerage allowed?

Sixth. Have you in operation a sewerage purification system? Give results.

Seventh. How is city garbage disposed of? Is the plan satisfactory?

Eighth. Have you meat, milk or pure food inspection? Give results.

Ninth. Have you noticed any increase or decrease in typhoid fever, scarlet fever, diphtheria, smallpox or consumption? To what do you attribute increase or decrease?

Tenth. How many cases of "infantile paralysis" in the city during the past season? What methods would you suggest for its control?

Eleventh. Have you a detention hospital for contagious and infectious diseases? How many cases have been treated for the biennial period ending June 30, 1910?

	Cases	Deaths
Diphtheria
Scarlet Fever
Smallpox

Twelfth. What defects do you note in our present health laws? What changes would you recommend?

Thanking you for a prompt reply and for any suggestions you may feel disposed to make, I am

Yours Respectfully,

(Signed)

J. GRASSICK, M. D.
Secretary State Board of Health.

ADAMS COUNTY.

1. The greatest menace to public health in our county are open poorly protected wells where mice, squirrels, insects, etc., get in and pollute the water.

2. Privies and open vaults in villages get foul and I find it hard to make the people take proper care of them.

3. None.

4. None.

6. We have had a few scattered cases of such disease named but cannot say as to the direct cause.

7. None.

8. No.

9. We need a special officer to enforce the health laws, not leave it for a poor country practitioner who as you well know has plenty of troubles of his own without everlasting quarreling with his neighbors to make them observe the laws of health.

JOHN G. JOHNS, M. D.

Supt. County Board of Health, Adams County.

BARNES COUNTY.

1. Pollution of streams by sewerage, etc.

2. Most of my complaints are those pertaining to pollution of streams, unsanitary meat markets, filthy alleys, dead animals.

3. The sewerage at Valley City empties into the river near the heart of the city and empties into the river at a place where the current of

of the river is very slow. There is also one hospital sewer emptying into the river a short distance from the above named sewer and this sewer is located in the resident portion of the city and the same conditions regarding current prevail as above mentioned.

4. I cannot state positively but several cases of typhoid have developed in families who use water from the river below where hospital sewerage drains into the river. It may be possible that the hospital sewer which is located a short distance from the above named families who were affected, might be the source of the trouble.

5. Prevent emptying sewerage into the river within reasonable distance from the city.

6. No.

7. None.

8. No.

9. Not sufficient financial power or other power to enforce them. Lack of compensation to those supposed to enforce the law.

10. A more liberal appropriation for the benefit of public health.

J. VAN HOUTEN, M. D.,

Supt. County Board of Health, Barnes Co.

BENSON COUNTY.

2. Open privy pits not screened from flies. People won't take notice without some legal action.

3. No pollution of streams.

4. None.

6. Decrease in typhoid, increase in diphtheria and scarlet fever. Diphtheria among the Russians is hard to control, as they do not respect quarantine. Same applies to scarlet fever. Consumption. nothing of note.

7. None.

JOHN CRAWFORD, M. D.,

Supt. County Board of Health, Benson County.

BOTTINEAU COUNTY.

I know of no conditions, natural or acquired, especially detrimental to public health existing in Bottineau county.

Complaints have been made to me in regard to dead animals being left to decay above ground. Where the owners could be determined they were compelled to bury them, otherwise they were buried at the expense of the county.

A few complaints have been lodged with me of persons with scarlet fever trying to avoid quarantine by not calling medical attendance. Where a diagnosis could be made they have been quarantined.

Stream pollution with sewerage, etc., is not practiced to any extent in this county. I know of no cases of disease which have been traced to stream pollution.

Very few cases of typhoid have been reported in this county since I have been in office. The same is true of consumption. Diphtheria reports remain about the same from year to year, but scarlet fever has increased. This was due to light cases where no physician was employed and no quarantine established.

I have had no cases of "Infantile Paralysis" come under my observation during the past season, and none have been reported to me within this county.

I notice more defects in the enforcement of our present health laws than in the laws themselves.

M. A. STEWART, M. D.,

Supt. County Board of Health.

BOWMAN COUNTY.

Our county has been extremely healthy and I have had no complaints regarding unsanitary conditions. We have had no epidemic of typhoid fever, diphtheria, or scarlet fever, and our consumptive cases are mostly chronic fibrous cases that have been recommended to come here from the eastern states for climatic reasons.

Last August four cases of Infantile Paralysis were reported from the western end of the county but as they were in infants and rapidly proved fatal I did not see them. These cases were all in two families which recently came from Chicago. They were isolated and no other cases developed.

As to defects in the present health laws:

First, the carelessness of consumptive patients in public and their homes in taking proper precautions so that it will not spread.

Second, the laxness of physicians to report any cases of infectious or contagious diseases.

On the whole our county has been very fortunate and we hope for it to continue.

H. J. R. LINDSAY, M. D.,
Supt. County Board of Health.

BURLEIGH COUNTY.

1. In the northwestern portion of the county there is a settlement of foreigners who as a rule do not employ a regular physician and often contagious diseases prevail here and spread to adjacent communities. The only remedy I can suggest is to have the health officer make a personal investigation when reports come up. About two weeks ago I made such an investigation.

2. There have been no other reports except for the above.

3. The sewerage from the city of Bismarck is discharged into the Missouri river.

4. No.

5. Septic tank or a filtration plant.

6. In the rural districts there have been very few cases of either in the past six months except for the recent cases of diphtheria, which I have reported on another sheet. The cause of this I answered in No. 1.

7. None.

8. I regard this as an infectious disease and my suggestion for control would be disinfection of the body discharges and quarantine.

9 and 10. Measles should be quarantined. We have had a bad epidemic in this city during May and June. This could have been avoided by quarantine.

A. M. BRANDT, M. D.,
Supt. County Board of Health.

CASS COUNTY.

1. Poor water, spread of disease by flies, which should be remedied by better sanitary conditions.

2. But few complaints have come to this office.

3. Nothing has been done to prevent stream pollution.

4. Some cases of typhoid.

5. Streams used for water supply for domestic use should be under control of the state.

6. There has been a decrease of all these diseases during the past few years.

7. About 50.

8. Do not know cause or whether it is infectious or not. Do not know how to control it.
9. Too small an appropriation for the State Board of Health.
10. An increased appropriation and unlimited power granted.

G. A. CARPENTER, M. D.,
Supt. County Board of Health.

CAVALIER COUNTY.

1. None except the fact that many contagious diseases have been of so light a form that no physician has been called and in this way diseases have been spread.
2. Not any.
3. Not any.
4. None.
6. Decrease in typhoid, better sanitary conditions. Diphtheria decrease. Scarlet fever, increase, mild epidemic. Consumption, no change.
7. None.
8. No.
9. None.
10. None.

W. W. McQUEEN, M. D.,
Supt. County Board of Health.

DICKEY COUNTY.

1. None.
2. None.
3. Exists here at Ellendale but City is putting in septic tank now.
4. No.
5. As under No. 3.
6. No, decrease rather.
7. Three, none fatal.
8. I have not. These have all been sporadic. No two cases in the same family.
9. In quarantine laws make period for diphtheria longer, or else like Minnesota, hold until bacteria absents.
10. Make quarantine more effective.

ROY LYNDE, M. D.,
Supt. County Board of Health.

EDDY COUNTY.

1. The use of shallow wells for drinking purposes. Our wells are from 8 feet to 16 feet deep. Especially is this true of our local centers of population, New Rockford and Sheyenne, neither of which is incorporated. Privies consisting of merely a hole in the ground with covering are the depositories for excreta, and the yard wells are in too close proximity. Some cess pools too are in use for house drainage. Very few of the privies have boxes or barrels for receptacles.

Suggestions for remedies: Driven wells for centers of population, and a general water supply and sewerage system.

2. Complaints have mostly been in the spring of carcasses of animals that have been secretly hauled out during the winter and left above ground to rot near some highway or family residence, also of filthy yards and alleys, particularly in rear of hotels, restaurants and fruit stores, and where ice cream is sold. Immediate attention has been given such complaints, the parties notified personally or by letter of the necessity for immediately cleaning up and warning to desist. In case of dead

stock where ownership cannot be fixed, sheriff is ordered to dispose of properly and send bills to Board of Health.

3. We have two streams in this county, the Sheyenne and James rivers, and they are practically free from pollution by drainage or otherwise.

4. No.

6. No, but the people are improving very much in management of cases of consumption.

7. Two.

8. No.

C. MacLACHLAN, M. D.,
Supt. County Board of Health.

EMMONS COUNTY.

1. There are no conditions existing in this county which are at all incompatible with the best of health to its inhabitants. We have excellent drainage, plenty of fresh air and with few exceptions good water. The railroad companies have dammed one or two water courses, thus making some stagnant pools. Some of the villages have been careless about garbage dumps.

2. Complaint was made about some carcasses last spring and they were buried.

3. Not at all.

4. None.

6. Typhoid fever, scarlet fever and diphtheria have been on the decrease. consumption has, I think, been on the increase for the last year or so. Teaching people how to live will do more to put consumption on the decrease than any one remedy, and I think we should have an out-of-door sanitarium provided by the state for these cases. I believe that these cases should be treated gratis when necessary because I think that the poor people are less careful for many reasons. That you know as well as I.

7. About 8 or 10.

8. While I have endeavored to isolate all cases according to instructions from you I personally doubt its infectiousness, because I have as yet seen no two cases in the same family, though in nearly every case there were other children in the family. The observations of these few cases do not warrant a conclusion.

9. No criticisms.

10. No suggestions.

R. R. HOGUE, M. D.,
Supt. County Board of Health.

FOSTER COUNTY.

1. Disposal of sewage and refuse which is being corrected now by installation of modern sewage system. Septic tank, etc.

2. Only complaints are of minor nature which are corrected when they become known.

3. No stream pollution practiced in the county.

4. No.

6. Typhoid fever, decreased; scarlet fever, decreased; diphtheria is decreased; consumption has increased the last few years, but most of the cases were foreign to this country when contracted.

7. No cases of "Infantile Paralysis" have been reported in this county. Have seen three in an adjoining county.

8. No, have not been able to deduce any theories with any degree of certainty about it.

9 and 10. No, have not noticed any defects to health law but sometimes in the matter of reporting contagious cases some laxity, and particularly to the so-called milder diseases, such as measles and whooping cough. It is hard to get the people generally to consider how serious they are but there ought to be a rigid quarantine made for both.

J. ROSS MACKENZIE, M. D.,

Supt. County Board of Health.

GRAND FORKS COUNTY.

1. The county board of health has held only one meeting during the past fifteen months.

I have not had half a dozen cases of infectious disease reported during the past two years.

As the present law stands the county superintendent of health is more ornamental than useful. He has practically no power and is unnecessary. If he has anything to do he cannot afford to do it. He is only paid five dollars per day for each day he actually works for the county board of health. He cannot afford to go to a distant part of his county on board of health matters. He should either be paid more or done away with altogether, and his work given to the state board of health.

H. H. HEALY, M. D.,

Supt. County Board of Health.

GRIGGS COUNTY.

1. The sanitary condition of the county as a whole is good and there has been decided improvement in the last few years in this line.

2 The complaints which have been made are of a local nature and they have been about the way that hotels throw out their slops, the city or towns public dumping ground too near main road and the way the people will leave all kinds of dead animals unburied in any and every location. The poor way that the slaughter houses have of disposing of waste from killed animals. The way we disposed of these complaints was to see each and every party who has violated the law and made him remedy the conditions.

3. Very little used. Cattle wading in the stream is all. Only one small muddy river.

4. No, none that we know of.

5. None.

6. Typhoid, decreased; smallpox, decreased; diphtheria decreased, scarlet fever, increased; consumption, increased. Smallpox and diphtheria have been decreased by quarantine, vaccination and fumigation in all suspected cases. Scarlet fever got an increase on account of some very mild cases in the county and no doctors called in and so got a good start, due to lack of precaution on the public side. Consumption due to lack of sanitary conditions, care and lack of education. The last article could be helped by sending letters and circulars in their respective languages to every family in the county, and that no furniture could be sold at public auction in the country and town without being fumigated.

7. Four cases of Infantile Paralysis.

8. Two cases from cold and exposure to rain and work, while other two just seemed to catch it like any other disease.

9. None.

More work and better inspection has been done this year by the board of health than was ever done before.

L. ALMKLOV, M. D.,

Supt. County Board of Health.

HETTINGER COUNTY.

1. None that I know of.
2. A few complaints regarding disposal of garbage. Removal.
3. Not at all.
4. No.
6. No.
7. One.
8. No, would recommend isolation as a preventative.
9. None.
10. None.

F. E. REDMON, M. D.,
Supt. County Board of Health.

KIDDER COUNTY.

1. None.
2. None.
3. None that I know of.
4. No.
6. No.
7. None.

T. S. PRYSE, M. D.,
Supt. County Board of Health.

LaMOURE COUNTY.

1. It is seldom dead animals are properly buried. These violations of the law exist although secretly done and I do not expect it will cease except through educational means. We have the fly in abundance and I believe constant efforts in disseminating our knowledge of the role flies take in scattering disease will help in getting rid of them. We are emptying our sewerage into the river and contaminating the water. It would be practically impossible to remedy this condition here. Sanitary conditions in other respects here are very good.

2. No complaints to me.

3. We have a rather extensive sewer system here. All is carried to the river. In other parts of the county in rural districts as far as I know no hesitation in polluting the streams exists.

4. We have traced one case of typhoid to drinking of the river water.

5. Do not see any way of immediate correction of the pollution of the water.

6. No.

7. About fourteen cases of the disease with resulting paralysis and a number of abortive cases.

8. I think clinical experience substantiates its infectious origin. I believe people should be prohibited from visiting the house where the disease exists and the occupants likewise kept away from those not exposed.

9. We have almost a plenty of good laws but poorly supported by the people.

10. A more satisfactory enforcement of those we have would help some.

G. B. RIBBLE, M. D.,
Supt. County Board of Health.

LOGAN COUNTY.

1. None.
2. Occasionally complaints are made in regard to unsanitary conditions of creameries and slaughter houses. In the past these complaints

have always been investigated promptly by the board of health and the necessary improvements ordered made.

3. There is no stream pollution from sewerage in this county.

4. No.

5. I have not seen a case of typhoid fever in Logan county during the last two years. Smallpox was quite prevalent in 1909, but infrequent in 1910. Diphtheria and scarlet fever are decreasing. I believe consumption is increasing. I believe the spread of consumption is due to the fact that we do not quarantine tubercular patients.

7. None.

8. No.

10. Every physician in the state should be a health officer. Tubercular patients should be isolated. Pay health officers a respectable fee.

G. A. MATHEWS, M. D.,

Supt. County Board of Health.

McINTOSH COUNTY.

1. Lack of knowledge regarding contagiousness and infectiousness of diseases.

2. Unsanitary conditions of slaughter houses, creameries and dumping grounds.

3. Practically none whatever.

4. No.

5. Educational lectures to increase knowledge of people regarding health and disease.

6. Decrease in all infectious and contagious diseases, due to better care of health and a better understanding of the influences of climatic conditions and personal habits.

7. Seven cases.

8. No.

9. None.

E. H. MAERCKLEIN, M. D.,

Supt. County Board of Health.

McKENZIE COUNTY.

1. As this is practically a new county I have not found any condition derimental to the public health unless it would be the alkali water and that could easily be remedied.

2. There have been several complaints made on an unsanitary school house which was moved to another more sanitary building.

3. To quite an extent. Not so much by sewage as by dumping manure on the banks, especially during the winter months, expecting it to be carried off by the spring floods.

4. None that I know of.

6. As the cases are seldom reported it would be hard to say, but increased slightly. Typhoid, smallpox, and contagious diseases mostly brought in from other counties.

7. None.

8. No.

9. Have not noticed any.

10. That they be more rigidly enforced. Would suggest that posters be printed in different languages in regard to the reporting of births, deaths and contagious diseases, and that a copy of the law be sent to every physician in the state with a personal letter calling their attention to it. I find that the physicians either do not know the law or else they persist in breaking it.

V. G. MORRIS, M. D.,

Supt. County Board of Health.

MOUNTRAIL COUNTY.

1. Conditions, natural or acquired, that exist are: Laxity of the people in taking care of waste material. Slops from restaurants, manure from livery barns, etc., which serves as a hatching place for flies.
2. Complaints have been in line of dead stock that has not been buried. They have been disposed of by making the owners bury them.
3. Not at all that I have heard of.
4. Not that I have heard of.
6. There has been very little typhoid, diphtheria, scarlet fever or consumption. There was one community affected with diphtheria last spring. It was scattered by one who had lived in an affected district in Minnesota before coming to this state. There has been no case lately. One case of typhoid that I had under my care apparently came from eating circus ice cream.
7. There has been no cases of "Infantile Paralysis" in the county this year that I have heard of.
8. No.

M. E. TRAINOR, M. D.

Supt. County Board of Health.

MORTON COUNTY.

1. Conditions in Morton county as to public health are favorable. The city of Mandan draws its water supply from the Missouri and Heart rivers and the water of neither of these streams can be said to be unpolluted. In the rural districts present conditions are satisfactory with the exceptions of a few individual cases.
2. Some complaints were made that the carcasses of several dead cattle and horses lay exposed on a certain farm. The owner was ordered to burn or bury the same, which was done and no new complaints have been made since.
3. The sewerage of several of the villages in this county is drained into the streams and they are polluted in this way.
4. So far no cases of diseases have been traced to river pollution.
6. There has been probably a slight increase in typhoid fever, but there has not been an epidemic. Nearly all the cases were "imported." In several cases the source of infection could not be determined. Smallpox has decreased, also scarlet fever. Diphtheria has probably slightly increased, while consumption seems to have neither increased or decreased. No apparent causes exist for this condition except that most of the cases of typhoid fever and smallpox could be traced to infection elsewhere.
7. No cases of "Infantile Paralysis" have been reported during the past season.
9. It seems that the duties of county and local health officers are not clearly enough defined. The duties of these respective boards often seem to be conflicting.

M. KRANZ, M. D.,

Supt. County Board of Health.

NELSON COUNTY.

1. No unsanitary conditions.
2. None.
3. None.
4. None.
5. None.
6. No.
7. One

8. No.
9. Salary of superintendent so small that he cannot reasonably devote his time to efficient work.
10. Only as suggested in No. 9.

EJNAR LOHRBAUER, M. D.,
Supt. County Board of Health.

OLIVER COUNTY.

1. Owing to the decided rural condition of our community we are very free from the usual things that are detrimental to the public health.
2. There are no complaints except that I must occasionally order the burial or the cremation of some dead animal.
3. There is no stream pollution from sewerage in the county.
4. There have been no cases of disease traced to stream pollution.
5. Cremation; or the chemical destruction of all sewerage.
6. No increase in the named diseases, I think it was due to the establishment and the strict maintenance of quarantine.
7. No cases observed or reported.
8. Undoubtedly due to specific causes; therefore, the control should suggest itself; in strict isolation of any case.
- 9 and 10. I do not presume to criticise but think that the less severe but nevertheless contagious diseases: Measles, whooping-cough, etc., should be more energetically looked after, and if necessary more rigorously quarantined.

H. A. HOUSEHOLDER, M. D.,
Supt. County Board of Health.

PIERCE COUNTY.

A few complaints have been made to the board of health that dead animals have been left unburied, manure piled up on public highways, and overflowing cess pools in the city of Rugby. The guilty parties have been notified to bury the carcasses and to remove the manure and have as a rule complied with our orders. Since we have gotten our sewer system working in Rugby, we have no trouble with the cesspools.

There are no streams in the county so far as I know so we have no stream pollution with sewerage, consequently no disease is traced from this source.

There has been a decrease in typhoid fever, twenty-two cases have been reported since January 1, 1909. We had an epidemic of diphtheria last winter, but since it has been on the decrease. There has been 122 cases of diphtheria reported since January 1, 1909, up to the present time. Scarlet fever is also on the decrease, only 9 cases reported since January 1, 1909. Consumption is on the decrease as far as I can find out, these cases are very seldom reported.

I have not had a case of infantile paralysis during the past season, nor have there been any cases reported; I believe it is caused by a specific germ, that it is infectious and that cases should be isolated and quarantined.

I believe that our health laws are as good as in any other state and have no changes to recommend. Births and deaths are not reported as fully as they ought to be. I would recommend that the next legislature make large appropriations to the State Board of Health so the work could be carried out even better than at present.

A. M. CALL, M. D.,
Supt. County Board of Health.

RICHLAND COUNTY.

We are forced by economical reasons to compromise with thoroughness and efficiency in the conduct of the work which surely ought to be done by a board of health. No county official would give such valuable returns for means expended as an efficient county health officer. The position should be made attractive to our very best physicians, as judicial positions attract our best legal talent. The great benefits that would result from the work of a county superintendent of health, who by personal adaptability, education, experience, personal interest and exclusive devotion to the physical well-being and health of his community, would be far greater, I feel assured, than the compensation for which such a person could be secured.

I am in full sympathy with you in your desire for aid in the solution of the ten questions submitted. In this communication written hastily and without any serious thought and deliberation, I shall not attempt a solution but merely refer to each number and give you any impression I may have at the moment.

1. Richland county has no health problems peculiar to itself.

2. We have had complaints of contagious diseases unattended, of public funerals of persons where death was due to communicable diseases and no precautions or restrictions being observed. Epidemics have been successfully controlled in every instance by consultation with the local board of health, with the local physician present. The efficiency of preventive measures is taught, and the whole conduct of preventive measures turned over to the local doctor, to isolate or quarantine and disinfect in the most efficient manner, assuring him that the county board of health would support him in all efficient measures.

The use of tact in getting cheerful cooperation of all concerned is important in such circumstances.

3. Free and unrestricted pollution is practiced.

4. It is very easy to suspect a water supply, but I know by experience how difficult it is to trace any disease to stream pollution.

5. A question of this kind should only be answered by those having special training, study and experience.

6. I believe there has been a decrease in all communicable diseases. No positive assignment of cause can be made but diffusion of knowledge relating to these diseases, and hence more intelligent efforts at prevention may be an important factor.

7 and 8. We have had no cases of "Infantile Paralysis" hence, no recent experience with this disease.

9. Many defects. Many statutes relating to boards of health are so ambiguous that attorneys of equal ability hold different views as to their meaning. Our quarantine laws are antiquated. Should the burden of cost be placed on the one who voluntarily isolates himself for the benefit of his neighbors? Should he not be treated as a public benefactor rather than as a criminal? Should not his isolation be made as pleasant and inexpensive as possible? That a member of a household contracts a contagious disease is not necessarily a crime and quarantine is not established for the benefit of the quarantined, but for the benefit of the general public. Then who should bear the burden of expense? Then should not the beneficiary have the burden of expense and not add this to hardship of isolation, often a great sacrifice by those quarantined.

10. What changes should be made I leave to those who have time and talent to investigate the subject. I have assumed responsibilities here which present difficulties to be overcome and questions, the solution of which, more than keep me occupied.

I am very much interested in the things you are doing. The monthly bulletin is a splendid publication, and each number is worthy of preservation. The past record made by University, North Dakota, students should be very gratifying.

ROBERT H. DEVINE, M. D.,
Supt. County Board of Health.

ROLETTE COUNTY.

1. Poor water in towns and unsanitary conditions in rural districts. Suggest education along lines of garbage disposal and more sanitary out-buildings in towns. In country need of better ventilated houses and report of contagious diseases.

2. None.

3. None.

4. No, but to wells.

5. Educations.

6. Increase. I think main cause has been to our close proximity to Indian reservation and to Finland settlement to east, in Towner county. It seems they were in the habit of not trying to prevent spread in Finland and do not call physicians unless they are seriously sick, and these typhoid, diphtheria, scarlet fever, have been very mild and consumption they do not consider contagious and live in small poorly ventilated houses. I think good results would come from a campaign of education among them.

7. None.

8. No.

9. Laws are alright but people do not observe them. Think because the diseases have been so mild that they are not afraid of them.

10. I would recommend that the state or county defray all expenses regardless of patients' financial conditions. Think reporting births and deaths too complicated. Think the county boards of health and state board of health should meet at least once a year, expenses paid by each county and state.

JAMES P. WIDMEYER, M. D.,
Supt. County Board of Health.

SARGENT COUNTY.

1. Failure of local boards of health to act. Suggest that the law should be changed.

2. Failure to bury dead animals. Failure to obey the proper officer should be made a misdemeanor. Under the present law a civil action is about the only thing possible. I refer you to section 2001 2002 of the 1905 Code. At Quinners the butcher fed his hogs on tubercular dead cows, and later allowed the people of the community to eat the pork from same hogs. In Milnor an owner consulted an attorney and ignored my warning to bury four dead glandered horses.

3. Have had no complaints.

4. No.

5. None necessary at present.

6. Typhoid, no; smallpox, decrease; diphtheria, increase; scarlet fever, no; consumption, decrease. Smallpox decrease due to vaccination and strict quarantine, disinfection, etc. Diphtheria increase due to the fact that strict quarantine was not enforced. Consumption decrease possibly due to the fact that the public has been educated to believe that certain precautions must be taken. Thorough disinfection, etc.

7. One case.

8. Probably a germ disease. It occurs as an epidemic and for that reason I arbitrarily assume that it is infectious. Just how infection is carried I do not know. I have the greatest respect for the disease and the people in my county are horribly afraid of this disease and they expect their health officer to prevent its spread in this county if such a thing is possible. Every case of "Infantile Paralysis" of which I have knowledge, which occurs in this county, will be rigidly quarantined for the first month and then all the clothes and premises will be thoroughly disinfected.

9. Under the present law the village and township trustees are local boards of health and under the law a physician is required to or may report his contagious disease cases in writing to the local boards of health. What is the result? I will tell you the result in this county. Nothing is ever done by the local boards to stamp out disease. Why? Well, there are several reasons. It is rare to find a physician on the local boards, the members are usually laymen, they are not experts on contagious disease and are not able to make a diagnosis. It is absolutely essential that the quarantine officer should have that ability. Why? Because pressure has been brought to bear upon me to have exzema cases quarantined for smallpox. Laymen having made the diagnosis. Again, laymen are afraid to expose themselves to contagious disease and after exposure they are afraid that they might carry infection to the members of their families.

Now you know and I know that when a person or family are placed under quarantine they are deprived of their liberty and not even allowed to have visitors. You might just as well place them in jail. Consequently in small communities people bring all sorts of influence to bear upon the physician in attendance and upon the members of the local board to prevent being quarantined. Due no doubt to the fear of loss of business nothing is done. The physician in attendance tells the local board that the infected family will voluntarily remain on their own premises and there is no notice served on the public to beware.

I am serving my third term as health officer of Sargent county and during that time one epidemic of smallpox, one of diphtheria and one of scarlet fever could be proved to be due to the carelessness of some physician and the failure of the local board to act in each case. Upon investigation each physician at fault claimed to have notified in writing the local board. The local board plead ignorance of the law and method of procedure.

10. I would recommend that each physician be required under penalty of a stiff fine to promptly report all his contagious disease cases to the superintendent of the county board of health of the county in which the contagious disease cases are situated, provided, that if the contagious disease cases are located within the confines of a city which has a physician as city health officer that he also must be promptly notified.

WILLIAM WALTER KING, M. D.,

Supt. County Board of Health.

SHERIDAN COUNTY.

1. The largest part of our population comes from eastern Europe and they do not understand that diseases can be spread by direct contact and their view point as to epidemic diseases is fatalistic. If children in a family die from any contagious disease it is because the Lord wanted them. A physician is hardly ever called and quarantine not observed but considered to be spite work of the doctor. The only remedy is strict enforcement of the law and education of the public.

2. Complaints referred mostly to filthy conditions of slaughter houses and back yards, etc., and were personally attended to by the health officer.

3. There are no streams in this county.

6. No increase has been noticed.

7. None.

9. Fees for board of health work are so low that a health officer actually loses money in traveling any distance.

10. I suggest that a health officer be paid a salary like any other county officer.

H. NEUKAMP, M. D.,

Supt. County Board of Health.

STARK COUNTY.

1. Natural conditions excellent. Acquired conditions would be covered by soil pollution and the open privy vault.

2. Practically none. An occasional complaint regarding some unburied dead animal.

3. Dickinson has the only sewerage system in Stark county. It's sewerage is emptied into the Heart river, after going through a septic tank.

4. No cases of disease known to have arisen from stream pollution.

5. None.

6. As compared with previous biennial periods, and considering increased population, believe we have less typhoid, no smallpox, less diphtheria and scarlet fever; consumption very rare.

7. Have seen two cases only of infantile paralysis, one in Belfield, N. D., and one in Taylor, N. D. I feel reasonably sure that these are all we have had, as the public are alarmed about this disease and report cases promptly.

8. From the little experience I have had, I am inclined to the theory of some unknown intermediary host, or that the virus is conveyed by the bite of some unknown insect. This, however, is only a guess, and probably a poor one.

Our health laws, it seems to me, are reasonably good, if proper means were taken for their enforcement.

10. I think the only rational method to adopt would be for medical men with special training in sanitation and hygiene, to be paid a competent salary and devote their whole time to the management of the general health, having practically police power.

H. A. DAVIS, M. D.

Supt. County Board of Health.

STEELE COUNTY

1. Considerable dysentery, especially among babies and young children seems to follow in the wake of threshing outfits. Improvements of sanitary conditions the best remedy.

2. None.

3. Not at all.

4. No.

6. More smallpox last year.

7. One.

8. No.

9. In regard to smallpox.

10. Compulsory vaccination for smallpox, the quarantining would become unnecessary.

C. B. HARWOOD, M. D.,

Supt. County Board of Health.

STUTSMAN COUNTY.

2. Of dead horses and cows. They always have been buried.
3. The sewerage from Jamestown is run into a tank and disinfected to a certain extent before flowing into the river.
4. Not since the tank system has been in use.
6. Neither an increase or decrease.
7. Not any from January 1, 1910 to June 30th, 1910.
8. No. Have fumigated in all cases in the past.

HELENA K. WINK, M. D.,
Supt. County Board of Health.

TRAILL COUNTY.

1. The natural conditions of the county are conducive to good health, but the improper disposal of sewerage and the very uncleanly condition of the slaughter houses and the disposal of garbage are detrimental to good health.
2. A few complaints have been made on minor matters and they have been satisfactorily disposed of.
3. Mayville and Hillsboro empty their untreated sewage into the Goose river. No diseases have been traced directly to this source but they have been strongly suspicious.
5. I would suggest that no corporation or individual should be allowed to pollute the public waters of the state without getting permission from the state board of health.
6. There has been noted a decrease of all contagious and infectious diseases due to rigid quarantine and thorough fumigation.
7. None.
8. No.
9. Boards of supervisors make a very poor health board.
10. That a physician should be a member of all health boards and that they should be paid a reasonable amount for their services.

O. A. KNUTSON, M. D.,
Supt. County Board of Health.

WARD COUNTY.

The conditions most detrimental to public health is the carelessness of the people in regard to the disposal of garbage and sewage. This is being improved by education and also by making the local boards of health responsible for conditions in their communities.

Many complaints have been made in regard to the woefully unsanitary conditions of slaughter houses and butcher shops, and to a less extent dairies, grocery stores, bake shops, and other places where food is prepared. There has also been a good deal of trouble from the pollutions of the Mouse river and other water in the county.

Complaints have all been investigated and parties concerned warned, and in some cases advertised, in others punished. I believe the most good is done by advertising the places that are not up to the standard. The state authorities acting under the pure food law have done a splendid service in this line.

I do not know of any cases of disease traced directly to stream pollution and yet the fact that the installation of the new water system has practically stamped typhoid out of Minot would at least be presumptive evidence that the city water was to blame for much of it.

There has been a great decrease in the number of cases of typhoid, diphtheria and scarlet fever, but no decrease is noticeable in tuberculosis. The reason for the decrease in Minot is given above. The decrease in

diphtheria is probably due to the more general use of antitoxin as a prophylactic measure.

Only two cases of infantile paralysis have come under my notice, both in adults and both have partially recovered.

The defect in the present health laws is not so much in the laws as it is in the enforcement of the laws and in the indifference shown by practitioners to the necessity for more complete reports of all infectious cases.

One change I should suggest is that our state should follow the example set in Minnesota and strike smallpox off the list of quarantined diseases.

A. J. McCANNEL, M. D.,

Supt. County Board of Health.

WELLS COUNTY.

Contagious Diseases.

1. We had an epidemic of five cases of diphtheria in a village but strict quarantine and use of antitoxine, employment of a quarantine guard, and fumigation arrested it.

2. We have had heavy influx of scarlet fever from the surrounding counties. But we sent out a statement in the leading newspaper, received early reports, and it got no further than twenty families in as many different townships and villages. Only in one town where conditions were rather lax we had nine families reported at once. In all these cases no spreading took place after the board of health interfered.

3. We had an epidemic of smallpox, all in one township. We quarantined all around the edge of the territory—on the principle of fire breaking. The result was only one new case. At this time just as hot weather set in it was the end of the epidemic.

4. We had typhoid fever, some twenty cases, along the northern boundary, part of an epidemic to the north of us, and one over which we have no control. In the part of the county where our own cleanliness and sanitation are fully effective, there has not been a case.

5. Of measles we have had two epidemics, thirty-five and thirty-eight cases respectively. A card was put up, the children kept at home, the nurse directed to take precautions and eventually the card taken down. Result: The disease was arrested both times.

6. Tuberculosis is slowly increasing and there are several houses that ought to be fumigated, though we have not done so.

7. Erysipelas in one house, five cases. Otherwise a case here and there. In my opinion the filthy houses, at least, should be fumigated, as I always find it spreads in filthy families.

In answer to your special questions I will state:

1. Slaughter houses and hog yards are steadily in need of inspection. The animal material, in the fly season, causes summer diarrhea, carried into the food by the flies.

We are looking after the slaughter houses, forcing them to clean up and get out of the towns.

Unburied animals are dangerous in the same way. We force the owners to bury them four feet below the ground.

3. Lack of publicity is unfortunate in many ways. The boards of health should send out bulletins as to epidemics, cleaning up, etc., and we have done so. To exemplify: We always found in each place three to seven cases or families with scarlet fever in 1908. In 1909 after our announcement we always had reports of the first case.

Again, unburied animals, etc., will merely puzzle and excite the people, but in case of publicity there is an early and business like report.

4. Stream pollution is practiced at Harvey, and the local health officer should report details.

5. Cases of "infantile paralysis" have not been reported this season.

As to our present health laws I have for years found them defective. In our county conditions seem to be almost ideal for good work—because our board of county commissioners have favored the work and the expenses connected therewith, inasmuch as they have shown faith in the efforts of the board.

But in counties where the commissioners are objecting to the expenses, or even one single commissioner takes exception to the expenses, the result is that all efforts of the board are crippled, health officers get inadequate pay, and in several of our neighbor counties diseases are running riot on that account, with the result that we must ever watch our boundaries.

I suggest the following changes:

1. The board of health should be independent of the county commissioners.

2. They should make their own levy just as the school boards.

3. The health officer should have livery, automobile charges and hotel bills, etc., paid in addition to \$5.00 per diem and 5c mileage. This is the way we do in our county, but there is always the danger that just as soon as some commissioner takes exception to expenses the county board of health may yield to the objections made and important work may be neglected.

4. The state board should have power to remove health officers, and inspector should cover the whole state, and no appointment of a health officer should be valid until approved by the state board.

Too many counties are lax in carrying out the health regulations, jeopardizing the lives of the people in adjoining counties which may be doing their best to protect the lives of their inhabitants.

This recklessness will never end until thorough inspection takes place, and under the direction of the state board. By this means the offending counties may be shown how far they are behind the times, and an effort may be made to have them do their duty.

Special Report.

1. In ordering the burial of carcasses, the cleaning up of villages and slaughter houses, we have generally succeeded by issuing orders to and directing the local boards of health to clean up, etc., and to report to the county board all cases of neglect and lack of obedience. In this way, eight different times in two years, carcasses have been looked after.

We generally find the local boards very willing and active in carrying out orders as long as they have explicit instructions.

2. We have issued special warnings and statements in the official paper whenever an epidemic of scarlet fever or measles has been threatening, thus securing the general support of the public.

3. In quarantining we have confined our work to the smallest possible number of persons and rooms—often permitting all people in the house, except the sick child and the nurse, to get out and also limiting the quarantine to a room to avoid hardships to the people.

4. We have no pesthouses, but in cases of special danger we have employed quarantine guards.

5. The fumigation we have done at the expense of the county.

6. At the present time all threatening epidemics seem to be at an end. The scarlet fever which has been moving eastward along the railroad and which was due in our county in 1908-1909-1910, judging from its steady progress in the counties to the east, did not get beyond the

initial cases, except in one part of the county where public spirit was too lax for timely reports.

Measles which made a rapid onset twice have also been arrested.

Smallpox was exceedingly mild and overlooked by the people. Therefore it got a heavy start with seventeen families in one township, before it was arrested. In this we permitted the men to go in and out, and without having any spreading.

Diphtheria craves a life now and then from its suddenness and the fact that the people have no suspicion of its existence.

7. We have at times, attempted to save expenses by having the local doctors attend to the quarantining, but it never has proved successful. The work lacks uniformity, the local man is too closely in touch with the people to assert his authority, and the firmness needed to carry out the regulations is rarely found in the man who is family physician and health officer at one time. Often there will be a conflict between the desire to keep the good will of the people and the duty of being sufficiently strict in carrying out the regulations, it also seems to be a fact that the local man who quarantines only occasionally does not feel the responsibility that is felt by one who is responsible for the entire county.

Furthermore the counties where all quarantining is done by local men have repeatedly made a complete failure of preventing epidemics, it seems as if one doctor surpasses another in being easy on their patients, and the result is that sickness is given an open field in such counties. It would be easy to give half a dozen examples in our state of this state of affairs.

8. The vital statistics are all in chaos. The law fits the old and eastern counties, but for counties with two-thirds unorganized territory the law is not well adapted. Eventually, as we advance, things will no doubt adjust themselves.

PER OYEN, M. D.,
Supt. County Board of Health.

CITY OF ANETA.

1. Surface water drainage.
2. Wells. b. Only fairly so.
3. None.
4. Cesspools and privies. Coarse material hauled to dump grounds.
5. No stream.
6. No.
7. Hauled to dump grounds. Yes.
8. No. State inspection has worked well.
9. No.
10. None. Quarantining.
11. No.
12. State or county payment of quarantine expenses.

C. E. BENNETT, M. D.,
City Health Officer.

CITY OF COOPERSTOWN.

1. Better and cleaner streets and alleys, better drainage.
2. Wells. Cisterns.
3. Boiling. Filters.
4. Run into ponds one-half mile from town.
5. No stream.
6. No system.
7. Hauled out to public dump one mile north of town, burned twice a year. Not as good as might be.

8. No city inspector but state inspector for same.
9. Scarlet fever, increase; carelessness of some of the public in not reporting mild cases. Diphtheria, consumption and smallpox, no cases in a year, decrease.
10. Three cases of infantile paralysis and one of spinal meningitis, (T. B.) Segregate the case in part of the house, as quarantined, and use every care not to let it spread.
11. No detention hospital.
12. None.

L. ALMKLOV, M. D.,
City Health Officer.

CITY OF DICKINSON.

1. The development of a good city water supply, and the installation of a competent sewerage system.
2. Deep bored wells, in the valley north of the city which is free from habitation and surface pollution. The water is of excellent quality and eminently satisfactory.
3. Our water contains practically no organic matter, and requires no purification.
4. Our sewerage goes into a septic tank, and from there into the Heart river.
5. This river is not used by anyone for drinking water, and no objections have been made, that I know of, to its use for sewerage disposal.
6. Septic tank. The plant was installed by an expert in such matters I do not consider myself competent to give accurate results, but as no complaint has arisen, it would seem to be satisfactory.
7. The city garbage is hauled to the city garbage heap, a mile and a half out of town, and is burned from time to time. I think the plan with our present population is perfectly satisfactory.
8. We have no meat, food or milk inspection.
9. I think the past two years shows a decrease in the infectious diseases, considering the population, probably due to better quarantine and disinfection, in turn due to increased intelligence on the part of the public, regarding such matters.
10. No cases of infantile paralysis in the city. Could only suggest absolute isolation, quarantine and disinfection.
11. We have a small detention hospital, located one mile from town. This is rarely used, except for paupers or aliens. During the past two years we have treated there, one case of scarlet fever, and one each of typhoid, diphtheria and measles; no deaths.
12. Think present laws are reasonably good, if properly enforced. Would recommend that for this work, medical men with special training in sanitation and hygiene, be paid a competent salary and devote their whole time to the management of the general health, having practically police power.

H. A. DAVIS, M. D.,
City Health Officer.

CITY OF DUNSEITH.

1. Surroundings of wells kept clean, garbage and manure not allowed to remain on premises more than a week.
2. Wells. Yes.
3. None.
4. Cesspools.
5. No.
6. No.

7. Carried outside the city limits and burned.
8. No.
9. Yes in typhoid, scarlet and diphtheria, but they did not originate here.
10. Only three cases. Cleanliness. It seems as if a dirty barn or stable had something to do with it, or milk coming from such a place.
11. No. Diphtheria one case, no death; scarlet fever, 10 cases, no death; smallpox, none for four years.
12. I believe there should be a law and enforced to its full limit, to keep porters or brakemen on passenger trains from sweeping coaches when occupied by one or fifty passengers.

D. LEMIEUX, M. D.,
City Health Officer.

CITY OF ENDERLIN.

The sanitary conditions of this city has been improved but there is a lack of interest among the people to assist the health authorities, and also too much of a laxness by the board itself. Therefore it is a hard matter to "do things" that ought to be done. But it is hoped that in the near future the public may see the necessity of cleanliness and sanitary measures that are often recommended to them and that the board will be more firm in the enforcement of the laws.

1. Streets properly cleaned and policed. Yards and alleys cleaned.
2. Artesian well. As satisfactory as can be made.
3. None.
4. Burial and burning.
5. No more than can be helped.
6. No.
7. Burned or buried. Not satisfactory.
8. No.
9. Believe there is a decrease. Due to more cleanliness and bringing the sanitary measures before the public.
10. Three reported. Isolation. Disinfection.
11. No detention hospital, though recommended several times. Diphtheria, seven cases, no deaths; scarlet fever, six cases, two deaths; smallpox, one case, no death.
12. Laws are all right, but not sufficiently enforced.

THOMAS J. STRONG, M. D.,
City Health Officer.

CITY OF FARGO.

1. No special improvements made during the past year.
2. Red river for city use and artesian and spring water for domestic purposes. Unsatisfactory at present. A modern filtration plant is to be constructed this coming year.
3. None.
4. Burned in the open.
5. Our sewer system opens into the river.
6. No.
7. Burned in the open. Plan is unsatisfactory.
8. All three, and the results are good.
9. Decrease in all infectious diseases.
10. About thirty cases. No suggestions as to control, as we do not know the cause.
11. Yes. We are erecting a \$20,000 building for that purpose as the old one was too small. Diphtheria, thirty-nine cases, no deaths; scarlet fever, five cases, no deaths; smallpox, eight cases, no deaths.

12. More powers granted to boards of health and larger appropriations for expenses.

G. A. CARPENTER, M. D.,
City Health Officer.

CITY OF FESSENDEN.

Water we get from wells. It is poor, full of organic and unorganic matter, decomposed and undecomposed.

Slop we throw in barrels and haul away, or in a hole in the ground with a tight cover, in which case it drains away.

Garbage in barrels, is hauled away.

A dumping ground we have, one and one-half miles from town.

Food we inspect, when anything suspicious is reported.

Of diphtheria we have had six cases, one death; scarlet fever, smallpox and typhoid fever case, none. Consumption, three cases, no death.

Our city is unusually clean. Summer diarrhoea is almost unknown. Flies are not very numerous.

Two years ago we notified the Soo Line officials to fill up the low ground around the depot. It would take 1,000 carloads of gravel to do so, but we held it to be an unhealthy place, stinking in summer. Last year they complied with the request.

PER OYEN, M. D.,
City Health Officer.

CITY OF GRAND FORKS.

1. In regard to the improvement made in the sanitary conditions of the city during the period from the 1st of the year to this time. An ordinance has been passed to make the sewer connection in the paving district of the city, and an ordinance, providing a meat and pure food inspector is also pending in the city council and will be up for the second reading at the next meeting. The city board of health has recommended to the city council, the building of an incinerator or destructor for the disposal of the city garbage.

2. The source of the city water supply is from the Red Lake river.

3. For the purification of the water, we are now using chemicals and the sand filter, and so far results have been good.

4. Sewage is run into the Red river.

6. We have no sewer purification system.

7. We have garbage collectors employed by the city and the garbage is hauled to the dump grounds. This system is not satisfactory and the health department have recommended sanitary methods as above stated.

8. We have a milk inspector. We have an ordinance pending in the city council, for both the food and meat inspector.

9. There has been during the period from June, 1909, to January 1, 1910, the following report:

Typhoid fever, 60.

Diphtheria, 34.

Scarlet fever, 103.

Tuberculosis, none.

Smallpox, 2.

From January 1st to June 30, 1910:

Typhoid fever, 12.

Diphtheria, 9.

Scarlet fever, 34.

Tuberculosis, 4.

Smallpox, 4.

10. There has been two cases of infantile paralysis during the past six months.

11. We have a detention hospital in our city. There have been 11 cases of scarlet fever in the detention hospital, with no deaths; 4 cases of diphtheria, and one death; and 2 cases of smallpox with no deaths.

12. In my opinion there ought to be a law prohibiting the pollution of streams and rivers by sewage, or in other words, there ought to be installed a sewage purification system in all these towns and villages that empty their sewage into the streams and rivers.

A. A. WESTEEN, M. D.,
City Health Officer.

CITY OF HILLSBORO.

1. We have drawn up a new code of board of health regulations, which are more complete and stringent than before. Our slaughter house has been removed from its unsanitary surroundings (the city dump grounds) and a new one erected according to the state board of health regulations. A first class milk ordinance has been passed by the city council regulating the sale of milk.

2. Source of water supply and artesian well one mile from the city, and it is very satisfactory.

3. Not necessary to purify our water supply.

4. A system of sewers, which empty into the river, take care of most of the sewage. These are flushed at regular intervals.

5. Stream pollutions by sewage is allowed.

6. No.

7. Each dwelling has a garbage can, and the contents are removed by the city scavenger (appointment) once a week, to the city dump where it is destroyed by fire. Our new regulation requires all liquid wastes to be emptied into the sewer where there is one, and if not, into the cesspool or vault which must be disinfected at stated intervals. The solid wastes (kitchen leavings) from each meal to be securely wrapped up in paper and deposited in the garbage can.

8. No, local inspection of meat, milk or pure food except by the state.

9. We have had no increase, but rather a decrease this last year over the preceding year, in typhoid fever, diphtheria, scarlet fever, smallpox and consumption. I attribute this decrease in a great measure to the fact that we had a great deal of rain last fall, 1909, and a great deal of snow in the winter. People are also more careful about the water and tanks they use for drinking purposes.

10. There was about fifteen cases of infantile paralysis in Hillsboro and immediate vicinity, but a large number of cases developed along the Red river on the Minnesota side, especially, with many fatalities. I think it would be a good plan to isolate these cases and disinfect their excreta the same as a typhoid case.

11. We have no detention hospital for contagious and infectious diseases. Diphtheria, 3 cases; scarlet fever, no cases, Smallpox, no cases.

12. They have been very efficient.

ARNT, G. ANDERSON, M. D.,
City Health Officer.

CITY OF JAMESTOWN.

1. During this period we have laid one mile of sewer and three-fourths of a mile of water mains. Inspections of milk, and of sanitary conditions in bakeries, groceries, meat markets, slaughter houses, etc., have been established. Board of health orders have been issued requiring that all manure be removed at least once in seven days and that all garbage be kept in watertight, covered receptacles.

2. Jamestown secures an abundant and satisfactory supply of water from a battery of four wells, eighty-five feet deep, one twelve inch and three ten inch, connected to a centrifugal pump of 800 gallons per minute capacity, which is driven by a 100 h. p. electric motor. A storage tank of steel and concrete construction with a capacity of 130,000 gallons, is placed upon a hill to the north of the city, at an elevation of 120 feet.

3. No purification attempted and none needed. Bacteriological tests fail to show colon bacteria; no growth at incubator temperature.

4. Five miles of sewers; seven miles of water mains; remainder of city employing outhouses:

5. Stream pollution not allowed—this rule very difficult to enforce.

6. A septic tank is in use and is giving very satisfactory results.

7. City garbage collected by private parties. Not satisfactory.

8. Milk inspection only. Require three per cent butter fat in milk and 18 per cent in cream. Only fair results.

9. Practically normal number of cases of contagious diseases for the year. Typhoid fever is practically unknown among our inhabitants using city water; and in every case has been traced to infected source, other than city water.

10. Infantile paralysis developed in a restricted way during the year; three cases being reported, one of which was fatal, we have been quarantining for one week beyond time temperature remains normal.

11. The following cases were treated in our detention hospital during the biennial period ending June 30th, 1910: Diphtheria, three cases; scarlet fever, two cases; smallpox, two cases; infantile paralysis, one case; no deaths.

12. To my mind a serious defect in our health laws is the not requiring burial permits to be issued by health officers instead of city auditors. Another defect is in allowing county health officers but five cents per mile mileage.

W. A. GERRISH, M. D.,
City Health Officer.

CITY OF KENNA.

1. None from previous year.

2. Artesian well, 320 feet deep; pumped from a reservoir to distributing tank which is elevated about seventy-five feet above the highest portion of the city. It seems to prove satisfactory.

3. None except keeping tanks, reservoir, mains cleaned out as well as possible and at frequent intervals.

4. Ordinary gravity method; empties into Middle DesLacs lake.

5. Middle DesLacs river did have its origin in this chain of lakes, but it has ceased as a stream; it connects with Mouse river about eight miles north of Minot.

6. None.

7. Hauling to isolated spots, outside city limits. Not satisfactory. I inspect the slaughter houses as to their condition, that is as far as it goes.

8. No, we have not.

9. Decrease in scarlet fever and diphtheria, due to strict quarantine. We have no typhoid in this city. Not one case for three years directly traceable to city. Our typhoid came to the hospital from other places. No smallpox. Consumption on the increase (I firmly believe.) Laxity among physicians to explain the contagium of the disease to the people and to give strict rules regarding the same. Afraid to hurt somebody's feeling.

10. None in city.

11. We have none at present. No diphtheria, no smallpox, no scarlet fever.

12. We have laws but they are never enforced. Misused liberty, nothing else. Milk ought to be inspected, dairy cows tested, meat inspection, these things ought to be demanded. We all pay enough for the articles and they ought to be wholesome.

I. C. J. WIGG, M. D.,
City Health Officer.

CITY OF LA MOURE.

1. More attention is being given to seeing all stables and yards are kept clean, that manure and refuse heaps are regularly hauled away, and that weeds are cut along side streets and vacant lots. Only surface boxes are allowed in out-houses; lime must be freely used in these and their contents emptied regularly.

2. Water in mains is from artesian wells, while drinking water is from shallow wells. It will be satisfactory so long as the wells can be kept free from pollution.

3. No means of purification employed.

4. Sewers empty into James river.

5. Yes. The James river is a sluggish stream and is never used for any purpose except for stock.

6. No.

7. Garbage is hauled to dump ground a mile out of town and burned. Very unsatisfactory.

8. The city has made no provision for meat, milk or pure food inspection.

9. Diseases mentioned have decreased, due to greater cleanliness, better isolation and better drainage.

10. Seven cases with one death. Cleanliness, sprinkling streets during dry, hot weather, rigid quarantining and spraying nasal passages and throats of those exposed with hydrogen peroxide.

11. No. Diphtheria, two cases; scarlet fever, one case; smallpox, no cases; and consumption two cases with one death.

12. It seems to me that all milch cows, whether in dairy herds or kept for family use, and those cattle being fattened for sale, should regularly be tested for tuberculosis and examined for lump-jaw and other diseases, by officials hired and paid by the state.

A. E. HILLIS, M. D.,
City Health Officer.

CITY OF LANGDON.

1. A regular system of street cleaning has been established. The citizens keeping the boulevards clean while the council looks after the streets proper. Tin cans have been placed along the main streets at intervals for the reception of waste paper, orange skins, lemon skins, etc. These cans the city empties at intervals.

A strenuous effort has been made to have all old and unoccupied buildings either removed or kept thoroughly clean, and a rigid inspection of back yards and alleys has been established. Much of these improvements have been due to the efforts and assistance of the Civic league.

2. Deep or bored wells. No.

3. None.

4. None.

5. No.

6. No.

7. A system of disposal by garbage cans has lately been inaugurated,

the inclosed copy of circular letter sent to each family throughout the city, will explain the system. It is taking some time and trouble to get the people interested, but we hope in another year to prove the system well established.

8. No.

9. No.

10. None. Horses should not be allowed to stand or be tied for any length of time on the streets, and their droppings should be cleaned off the streets. In addition, especially in this windy country, the streets should be oiled. This is, in outline, the system we are trying to establish in Langdon.

11. A small one. None.

12. So far as I know, there is no state law with regard to house fumigation after contagious or infectious diseases. There should be, I think a law governing this matter, giving specific directions how it is to be done, and by whom. The expenses of such fumigation to be borne by the county or city, as the case may be. As I have seen it done in Langdon, the fumigating has been left to each family, to very nearly do as they please. If there had been a specific state regulation I do not think this would have occurred.

J. J. MUGGAN, M. D.,
City Health Officer.

CIRCULAR.

To the Residents of the City of Langdon:

You are hereby notified that the city council has established, for the city a system for the collection and removal of kitchen refuse and garbage in the city, and that all householders will be compelled to conform to the same and to the rules in reference to the same hereafter set forth.

1. Each householder wishing to avail himself of the convenience of this system should secure for his use at least one garbage can or receptacle for kitchen garbage. This receptacle to be of galvanized iron or some other like material that can be easily disinfected, and not to be made of wood. Into such can shall be placed all vegetable tops, potato peelings, pieces of bread and all such kitchen refuse. All dish water to be strained and the solids therefrom to be placed in the can, but under no condition are the cans to be used for dish water or liquids of any kind. Kitchen garbage does not include rakings from yards, ashes, papers, clothing or anything of like nature, and these must not be placed in kitchen garbage cans, but must be burned. After each emptying of these cans a small amount of paper burned in them will thoroughly disinfect them and householders shall so disinfect them. Under no circumstances shall tin cans, bottles, broken glass or crockery, or other like substances be placed in these kitchen garbage cans.

2. All broken bottles, glassware, crockery, tin cans and other like substances shall be placed in a separate closed wooden box or barrel, or other like receptacle, and the same will be collected and removed at the same time the garbage cans are emptied by the city.

3. The city garbage system does not include the collecting and removal of ashes or stable manure, which householders are required to remove at their own expense.

If the garbage can and box for tin cans, broken bottles, etc., are placed in a convenient place, and if the householder has complied with the foregoing rules and requirements, the garbage can and box or barrel of broken glass, crockery, tin cans, etc., will be emptied and removed once in two weeks during the summer months of the year by the city, free of charge to the householder.

4. All property will be inspected regularly hereafter and all residences and property on which garbage or refuse is found, contrary to this system or these instructions, will be condemned and ordered cleaned immediately at the expense of the owner of the property or the householder, and all violations of these rules and regulations above set forth will also be prosecuted by the city.

The object in organizing this system is to establish a uniform sanitary condition in all respects throughout the city, and to have a clean and healthful city. Householdors should observe these rules in all respects without question and co-operate in this work.

By order of the City Council.

DR. J. J. MUGAN,
City Health Officer.

E. J. FOX,
Mayor.

CITY OF LIDGERWOOD.

1. Artesian water.
2. Artesian well. Yes.
4. Surface.
5. No.
6. No.
7. Hauled away. Yes.
8. No.
9. Decrease.
10. None.
11. No.

NICHOLAS J. SHIELDS, M. D.,
City Health Officer.

CITY OF MANDAN.

1. Installing sewerage system.
2. Pumping station, Missouri water and wells.
3. Settling tanks; open basin.
4. Septic tanks, cesspools, closets. Installing sewerage system.
5. Yes.
6. No.
7. City scavenger. Wagons. No.
8. No.
9. No.
10. None.
11. No. Diphtheria, two cases; scarlet fever, one case, with no deaths.

F. E. BUNTING, M. D.,
City Health Officer.

CITY OF MINOT.

1. As to improvements that have been made in the sanitary conditions in our city during the past, while they have not been entirely satisfactory still we have made some advance in a general way, such as having a better clean up of streets and alleys and of private premises, with regard to garbage, manure piles and privy vaults, extension of sewer and water mains, thereby doing away with many outside privy vaults and surface wells and providing the city with a safe drinking water furnished by the new filtration plant.

2. The Mouse river is the source of the city's water supply. It has proven entirely satisfactory in spite of the fact that on account of the drouth the river has been extremely low which has rendered the process of purification much more difficult.

3. The methods employed for its purification is briefly as follows: The water is taken from the middle of the stream to the filtration plant where it is treated with lime and sulphate of iron and after being allowed to stand in settling basin for a number of hours it is filtered through fine sand, then delivered to the mains. The water has been tested almost daily since the installation of the plant and both chemical and bacteriological tests at the branch of the State Public Health Laboratory located here have shown the water to be remarkably pure, as shown by the following report of the bacteriologist in charge of the Minot station, Public Health Laboratory.

Minot, N. D., November 1, 1910.

Dr. R. W. Pence, Health Commissioner,
Minot, N. Dak.

Dear Doctor:

In reference to the examination of water from the public filtering plant, I beg leave to report the following:

Samples of both river water and filtered water are collected thrice weekly in sterilized glass containers with wide mouth and glass stoppers.

That from the river is taken from the main intake pipe just as it enters the plant. The filtered water sample is taken from the main trunk line just as it leaves the plant.

Four agar plates are made of each. Of the filtered water, two plates of one C. C., and two plates of two C. C. are made. One of each of these is incubated for twenty-four hours at body temperature and colonies developed are counted and an average made from the two. The other two plates are grown at room temperature for 72 hours and colonies counted and averaged. Likewise with the river water with the exception that .2 and .5 are plated instead. A larger quantity having been found to yield two great a number to be counted accurately. In addition to this one C. C. of filtered water is planted into each of five fermentation tubes containing glucose bouillon. Of the raw water one fermentation tube is used. Also one C. C. of each raw and filtered water is plated in litmus lactose agar and incubated at body temperature. In the absence of gas production in the glucose bouillon and absence of acid production in litmus lactose agar the colon bacillus is taken to be absent. In case either gas is produced or red colonies developed in the plate these are further sub-cultured in appropriate media to determine if caused by colon bacillus or not.

From an average of the numerous examinations made since filtering plant was accepted the following figures have been obtained:

River water colonies per C. C.: Body temperature, 265; room temperature, 900.

Filtered water colonies per C. C.: Body temperature, 8; room temperature, 26.

An efficiency of 97 per cent bacteria removed at body temperature and a trifle over 97 per cent at room temperature. In addition the presence of colon bacillus is nearly always demonstrated in the river water while on the other hand it is absent from the filtered water.

Respectfully,

ROBT. P. STARK, M. D.

When our plant will do work as effective as this under the existing conditions we feel that under ordinary conditions we will have a most excellent water supply for the city.

4. The sewage is conducted to the border of the city where the sewer empties into the Mouse river. Owing to the rapid growth and development of the city a considerable number of residences have been

built near the outlet of the sewer and owing to the drouth in this section this year the river has been abnormally low, and as it is naturally a sluggish stream the sewage has not been carried away promptly. This has resulted in a stagnation at the outlet and conditions have become very bad in that vicinity on account of the offensive odor, etc. In order to guard against this, plans have been drawn and it is proposed to extend the sewer nearly a mile further down the river beyond the city limits. This, we think, will remove objections on that score.

5. Unfortunately stream pollution by sewage is permitted.

6. We have in operation a system for purification of the sewage, viz., a septic tank, into which all sewage passes, and it is there supposed to be liquified, deodorized and purified to some extent by the growth of anaerobic bacteria, etc. After remaining in this tank for a number of hours in its passage from inlet to outlet, the sewage is passed into the river. Our city engineer estimates that the septic tank is at present only about one-fourth the size necessary for a city of this size, so that the results can not be all that we should desire.

7. City garbage is disposed of at the "city dump grounds," located about a mile from the city limits. Much of the garbage is burned at the homes in furnaces and small incinerators. The purchase of an incinerator for the city is now under consideration. Also we are planning to have closed wagons to make regular trips over definite routes to collect the garbage from various parts of the city and remove it to the dumping grounds or incinerator.

The present plan is unsatisfactory in that many people are unable to have garbage removed when they desire, and thus accumulations are started. Also the wagons now used for that purpose scatter garbage of all kinds upon the streets, which is decidedly objectionable. The dumping grounds are objectionable on account of unsightly appearance, offensive odor and the liability of infectious material being carried away by dogs, cats, birds, etc., and the possibility of some disease being spread in that manner.

8. We have an ordinance covering supply of milk and cream, which was put into effect during the past year. Inspection of the dairies, also tuberculin test of the cows has been made, and our results have been good. About twenty tuberculosis cows have been discovered and put out of business, and besides this our milk supply is cleaner and of a better quality. As to meat and pure food inspection, we have no special ordinances, but these have been looked after in a general way by frequent inspections of stores and shops and compelling removal of garbage and refuse of all kinds and improving sanitary conditions as far as possible.

9. Judging from reports that have been sent to the city health department and from personal observation, there has been a decrease in the number of typhoid, scarlet fever, diphtheria, smallpox and tuberculosis.

We attribute this decrease of typhoid chiefly to the improved water supply and improvements in sanitary conditions in general. Decrease of diphtheria we attribute to quarantine and the more general use of antitoxin as a prophylactic in those suspected or exposed. As to smallpox we believe the decrease to be due to thorough vaccination of the great majority of people in this section of the country. As to scarlet fever, we believe the decrease to be due to quarantine and good luck. Decrease in number of cases of tuberculosis we think is due to dissemination of knowledge among the public of this disease with regard to hygiene and sanitary conditions.

10. No cases of infantile paralysis reported. A number of cases suspected and on the border lines. Would recommend quarantine.

11. We have a detention hospital for contagious and infectious diseases. During the past year we have had no cases of smallpox and only two or three of diphtheria and scarlet fever quarantined there.

12. Have no particular recommendations with regard to health laws.

R. W. PENCE, M. D.,
City Health Officer.

CITY OF PARK RIVER.

1. None.
2. Well. Yes.
3. None.
4. We have no sewage system.
5. No.
6. No.
7. Hauled and dumped about two miles from city. No.
9. Decrease in typhoid, scarlet fever and diphtheria. Smallpox increase, due to disobedience of quarantine. Consumption the same.
10. No.
11. No. Scarlet fever, one case; smallpox, five cases.

N. O. SANDVEN, M. D.,
City Health Officer.

CITY OF ST. THOMAS.

1. None.
2. Wells and cisterns.
3. A number of cisterns are equipped with filters.
4. None.
5. No streams.
6. No.
7. Hauled out of city and burned.
8. No. Should have inspection.
9. No.
10. None. None.
11. No. Scarlet fever, five cases.
12. More stringent regarding tuberculosis.

City Health Officer.

CITY OF RUGBY.

Rugby is the county seat of Pierce County and with a population, according to the last census, estimated at about 2,000. Two years ago the city installed a high water tower system of water works. The principal portions of the city were piped, and now our city is supplied with an abundance of fresh and pure water, both for drinking and lawn sprinkling purposes, and last, but not least, for fire protection as well.

Last summer a sewer system was also installed, but as there is no running water in the vicinity of Rugby where the sewage could be disposed of, a septic tank was installed about a half mile outside the city limits for the reception and disposal of the same, which works satisfactorily in every respect, to say the least. In this tank the solid matter is separated from the liquid in a remarkable short time. A very great percent of the former is wholly decomposed, while the latter runs off clarified, if I may not say purified, to the extent there is scarcely any perceptible odor from it.

We have had no typhoid fever directly traceable to water infection since the installation of our present sewerage system, now nearly a year ago.

The source of our city water is from driven wells, which are dug to a depth of about 25 feet, then sand points driven in to another 25 or

30 feet, and the result is an ample supply of as fresh, cool water as can be obtained anywhere.

Our city fathers are certainly to be congratulated for what they have done for Rugby along these lines during the past year or two.

In answer to query seven of your circular letter with respect to disposal of garbage, can only say the old-fashioned method is in vogue here, namely, transporting it in scavengers' wagons to the dump ground. Though we have no regular or licensed scavenger, which, by the way, would be highly desirable, between the city draymen and private teamsters, our back alleys and streets are kept in a very fair condition.

As regard milk and meat inspection, I regret to say nothing has been done to bring this all-important matter up for the people's consideration. The writer recently had a conversation with the assistant state veterinarian, located at this place, on this subject, and decided to put the matter up to the city council at their next meeting, and trust it will receive a favorable consideration.

In answer to query ten, in regard to increase or decrease in contagious diseases, can say the number of typhoid fever cases has lessened materially since the installation of our sewer and waterworks system. As to the prevalence of the other diseases mentioned, viz., scarlet fever, diphtheria, smallpox and consumption, the ratio for the past several years is practically unchanged.

With respect to infantile paralysis, I have been called upon to treat but two or three cases the past year, hence my knowledge or mode of treatment of this disease may be of small importance. My opinion, however, if I dare give it, as to etiology of the disease is malassimilation, or, in short, the ingestion of an over abundance of food. This is a condition which renders the system particularly susceptible to this disease as well as so many others. I believe more can be accomplished towards a cure for this disease by a rigid fast, continued up to a time when the surplus of ingested matter has been thoroughly eliminated, and natural hunger or a healthy desire for food ensues, which period may mean several days to as many weeks.

We have a detention hospital here for contagious diseases, which has served us well during the past eight or nine years. We have fortunately had no occasion to use it, however, for the past ten or twelve months. We have had, to my knowledge, the following cases in Rugby and vicinity in private homes during the past year: Diphtheria, five cases, one death; scarlet fever, six cases; smallpox, four cases.

Finally, with respect to query twelve, "What defects do you note in our present health laws? What changes would you recommend?" I believe our present method of collecting vital statistics falls short of what could be desired. It is natural for all of us to have our opinions on various things, and as mine has been asked for in this respect, I will state that I believe the old method of collecting vital statistics, births and deaths, etc., when the county superintendent of board of health had the matter in charge, was preferable to dividing this responsibility with the township or city clerks, as it is now. I believe if as much pressure had been brought to bear on the different health boards at the time this law was changed of the importance of making careful and regular reports of same, we would today have a much better system.

Further, I believe physicians all through our state, and for that matter physicians in every state of our Union, should work together in the best way possible in promulgating and speaking good words at the right time of Senator Owen's bill (of Oklahoma), which will soon come up for consideration in Congress of the United States. The object of the bill, as is well known, is the establishment of a new department in the cabinet, to be known as the Department of Health. I believe every physician who is familiar with the purports of this bill, or who will

read it through carefully and familiarize themselves with it, will say it is a good thing and help "push it along."

BENJAMIN FRANKSON, M. D.,
City Health Officer.

CITY OF WASHBURN.

1. No marked improvements in sanitary conditions.
2. Source of water supply, Missouri river. Satisfactory.
3. No methods employed for purification; residents have water delivered by tank; waterworks system being installed this fall; system employs two settling basins and tower.
4. No sewer system installed.
5. River polluted by city dump.
6. No.
7. Dumped in river. Not satisfactory.
8. No food inspection. Milk and meat inspection are needed.
9. Decrease of infectious diseases; do not know cause, unless increased vigilance of health officer.
10. None.
11. No detention hospital. One case of diphtheria, fatal.
12. The principal defect of our present laws is that the remuneration of the health officer is so small that he cannot give the matter as close attention as it needs. I would recommend the passage of a bill providing for complete isolation of tubercular cases; prohibit marriage of idiots, imbeciles, epileptics and those suffering from venereal diseases; prescribe a salary for the superintendent of the county board of health, sufficient so that the officer could spend at least half of his time in the interests of the county.

M. H. SAWYER, M. D.,
City Health Officer.

CITY OF WESTHOPE.

1. None.
2. Surface wells. Not satisfactory.
3. None.
4. None.
5. Yes.
6. No.
7. Hauled to dump ground, one-half mile in country.
8. No.
9. Typhoid, diphtheria, smallpox and scarlet fever rare here.
10. None.
11. Yes. No contagious diseases.

CHARLES DURNIN, M. D.,
City Health Officer.

BIRTHS BY COUNTIES FROM JULY 1, 1908, TO JUNE 30, 1909.

Giving Sex and Parentage.

Counties.	Total.	Sex.		Parentage.				
		Male.	Female.	Native.	Foreign.	Native father. Foreign mother.	Foreign father. Native mother.	Unknown.
Adams	4	3	1	2	1	...	1	...
Barnes	359	185	174	137	111	45	60	6
Benson	184	91	93	85	36	22	35	6
Billings	100	52	48	64	5	14	17	...
Bottineau	323	155	168	137	104	27	53	2
Burleigh	188	109	79	99	33	18	30	3
Cass	560	291	269	256	133	60	105	4
Cavalier	239	116	123	50	115	20	51	3
Dickey	97	49	48	59	21	7	9	1
Dunn	69	42	27	16	44	2	6	1
Eddy	61	37	24	26	14	10	11	...
Emmons	390	199	191	84	257	15	23	11
Foster	70	38	32	43	15	6	5	1
Grand Forks	441	206	235	170	114	44	82	31
Griggs	133	68	65	55	45	11	19	3
Hettinger	94	51	43	43	35	9	5	2
Kidder	36	18	18	20	6	2	7	1
LaMoure	163	85	78	72	53	13	21	4
Logan	137	66	71	37	75	7	15	3
McHenry	256	127	129	96	93	21	45	1
McIntosh	176	95	81	14	126	9	24	3
McLean	93	44	49	58	15	6	14	...
McKenzie	84	47	37	45	22	6	10	1
Mercer	2	1	1	1	...	1	...	...
Morton	160	95	65	76	51	12	18	3
Mountrail	44	20	24	23	9	2	6	4
Nelson	198	104	94	69	76	15	38	...
Oliver	20	9	11	12	6	...	2	...
Pembina	262	139	123	58	121	34	46	3
Pierce	81	48	33	38	24	4	15	...
Ramsey	258	147	111	116	65	23	37	17
Ransom	102	54	48	50	32	10	8	2
Richland	217	98	119	93	67	17	38	2
Rolette	69	42	27	30	16	5	18	...
Sargent	126	57	69	79	22	7	15	3
Sheridan	42	19	23	11	16	2	13	...
Stark	161	80	81	65	71	10	15	...
Steele	159	83	76	69	45	15	29	1
Stutsman	294	152	142	145	71	31	46	1
Towner	103	57	46	55	21	8	16	3
Traill	121	57	64	47	33	15	16	10
Walsh	257	142	115	88	92	24	52	1
Ward	686	325	361	337	155	54	122	18
Wells	103	55	48	41	32	6	15	9
Williams	118	62	56	51	33	10	19	5
Total	7840	4020	3820	3222	2538	679	1232	169

BIRTHS BY COUNTIES FROM JULY 1, 1909, TO JUNE 30, 1910.

Giving Sex and Parentage.

Counties.	Total.	Sex.		Parentage.				
		Male.	Female.	Native.	Foreign.	Native father. Foreign mother.	Foreign father. Native mother.	Unknown.
Adams	3	2	1	1	1	...	...	1
Barnes	391	217	174	164	109	42	72	4
Benson	201	98	103	97	58	19	25	2
Billings	139	67	72	95	23	12	8	1
Bottineau	219	112	107	85	75	26	32	1
Burke	8	1	7	2	2	...	4	...
Burleigh	205	113	92	178	35	13	26	3
Cass	499	266	233	254	112	56	76	1
Cavalier	280	157	123	66	115	25	71	3
Dickey	114	59	55	68	32	4	8	2
Dunn	36	20	16	20	9	3	4	...
Eddy	48	23	25	27	7	5	9	...
Emmons	298	156	142	74	179	10	21	14
Foster	49	25	24	28	8	2	10	1
Grand Forks	390	204	186	150	106	41	92	1
Griggs	86	49	37	35	24	9	17	1
Hettinger	113	56	57	58	41	4	10	...
Kidder	59	31	28	36	7	7	8	1
LaMoure	187	84	103	88	69	16	12	2
Logan	136	75	61	40	77	2	15	2
McHenry	247	119	128	108	77	27	34	1
McIntosh	167	98	69	19	103	13	31	1
McKenzie	134	69	65	67	33	13	20	1
McLean	108	57	51	55	28	11	14	...
Mercer	10	7	3	5	4	...	7	...
Morton	200	105	95	91	75	13	18	3
Mountrail	139	73	66	53	42	20	23	1
Nelson	191	93	98	64	61	25	41	...
Oliver	8	4	4	4	1	...	3	...
Pembina	262	137	125	66	115	23	58	...
Pierce	96	46	50	41	34	8	13	...
Ramsey	246	140	106	105	74	12	48	7
Ransom	119	67	52	63	24	14	16	2
Richland	179	98	81	91	37	11	35	5
Rolette	110	54	56	54	25	11	20	...
Sargent	93	49	44	49	17	11	12	4
Sheridan	42	21	21	18	14	1	9	...
Stark	105	58	47	49	39	8	9	...
Steele	146	89	57	57	44	13	31	1
Stutsman	314	170	144	174	70	27	40	3
Towner	93	45	48	56	19	5	12	1
Trall	146	87	59	46	49	20	27	4
Walsh	262	139	123	85	93	26	57	1
Ward	724	384	340	368	152	77	116	11
Wells	156	88	68	56	53	15	28	4
Williams	150	77	73	59	44	16	26	5
Total	7908	4189	3719	3419	2416	716	1262	95

DEATHS FROM ALL CAUSES FOR THE SEVERAL LIFE PERIODS.

From July 1, 1908, to June 30, 1909.

Age.	Males.	Females.	Total.
Under one year	530	387	917
From 1 to 2	52	62	114
From 2 to 5	83	75	158
From 5 to 10	58	37	95
From 10 to 15	33	40	73
From 15 to 20	62	62	124
From 20 to 25	74	79	153
From 25 to 30	65	75	140
From 30 to 40	103	118	221
From 40 to 50	107	78	185
From 50 to 60	128	75	203
From 60 to 70	94	93	187
From 70 to 80	90	67	157
From 80 to 90	57	45	102
From 90 to 100	7	1	8
From 100 to 105 .....	.....	1	1
Age not given	32	15	47
Total	1,575	1,310	2,885

DEATHS FROM ALL CAUSES FOR THE SEVERAL LIFE PERIODS.

From July 1, 1909, to June 30, 1910.

Age.	Males.	Females.	Total.
Under one year	451	354	805
From 1 to 2	62	61	123
From 2 to 5	80	79	159
From 5 to 10	65	51	116
From 10 to 15	39	33	72
From 15 to 20	52	45	97
From 20 to 25	90	63	153
From 25 to 30	83	71	154
From 30 to 40	100	93	193
From 40 to 50	104	81	185
From 50 to 60	129	63	192
From 60 to 70	108	58	166
From 70 to 80	100	69	169
From 80 to 90	55	33	88
From 90 to 100	6	4	10
Age not given	27	12	39
Total	1,551	1,170	2,721

DEATH STATISTICS.

From July 1, 1908, to June 30, 1909, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate per 100,000.
		Male.	Female.		
	All causes	1,575	1,310	2,885	577.0
	I. Epidemic diseases	132	95	227	45.4
	Typhoid fever	69	35	104	20.8
5	Smallpox	1	....	1	.2
6	Measles	1	1	2	.4
7	Scarlet fever	15	20	35	7.0
8	Whooping cough	4	7	11	2.2
9	Diphtheria	35	24	59	11.8
9	Croup .....	....	2	2	.4
9	Membraneous croup .....	....	1	1	.2
14	Dysentery	5	5	10	2.0
18	Erysipelas	2	....	2	.4
	II. Other general diseases..	200	202	402	80.4
20	Septicemia	4	7	11	2.2
21	Tuberculosis	108	121	229	45.8
26	Larynx	1	....	1	.2
27	Lungs	88	99	187	37.4
28	Meninges	7	5	12	2.4
29	Abdominal	3	3	12	2.4
30	Pott's disease	1	....	1	.2
31	Tuberculosis abscess .....	....	1	1	.2
33	Other organs	4	1	5	1.0
34	General	4	6	10	2.0
38	Venereal diseases .....	....	....	....	....
	Cancer	49	46	95	19.0
39	Mouth	2	1	3	.6
40	Stomach and liver	30	16	46	9.2
41	Intestines	2	3	5	1.0
43	Breast .....	....	8	8	1.6
44	Skin	1	....	1	.2
45	Other organs	14	18	32	6.4
46	Tumors	7	6	13	2.6
48	Rheumatism	6	6	12	2.4
49	Scurvy	2	....	2	.4
50	Diabetes	10	8	18	3.6
51	Exophthalmic goiter	1	1	2	.4
52	Addison's disease .....	....	2	2	.4
54	Anemia, leukemia	5	4	9	1.8
55	Other general diseases	2	....	2	.4
56	Alcoholism	6	1	7	1.4
	III. Diseases of nervous system	143	122	265	53.0
60	Encephalitis .....	....	1	1	.2
61	Meningitis	25	39	64	12.8
62	Locomotor Ataxia	4	....	4	.8

DEATH STATISTICS—Continued.

From July 1, 1908, to June 30, 1909, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate per 100,000.
		Male.	Female.		
63	Other diseases of spinal cord..	4	3	7	1.4
64	Apoplexy	37	28	65	13.0
65	Softening of the brain	2	2	4	.8
66	Paralysis	19	9	28	5.6
67	General paralysis of insane....	2	1	3	.6
68	Other forms of mental disease	4	1	5	1.0
74	Other diseases of brain	2	5	7	1.4
69	Epilepsy	6	2	8	1.6
70	Infantile paralysis	2	2	4	.8
71	Convulsions	35	27	62	12.4
72	Tetanus .....	....	1	1	.2
76	Other diseases of nervous system	1	1	2	.4
	IV. Diseases of circulatory system	72	63	135	27.0
77	Pericarditis	1	....	1	.2
78	Endocarditis	13	10	23	4.6
79	Heart disease	50	36	86	17.2
80	Angina pectoris .....	....	1	1	.2
81	Diseases of the arteries	1	....	1	.2
82	Embolism and thrombosis	4	15	19	3.8
86	Other diseases of circulatory system	3	1	4	.8
	V. Diseases of respiratory system	152	156	308	61.6
87	Laryngitis	4	2	6	1.2
90	Acute bronchitis	9	10	19	3.8
92	Bronchial Pneumonia	18	23	41	8.2
93	Pneumonia	94	97	191	38.2
94	Pleurisy	6	7	13	2.6
95	Congestion of lungs	4	4	8	1.6
91	Chronic bronchitis	3	1	4	.8
97	Abscess of lungs	3	3	6	1.2
98	Asthma and emphysema	3	4	7	1.4
87	LaGrippe	1	2	3	.6
99	Hemorrhage of lungs	6	2	8	1.6
	Other diseases of respiratory system	1	1	2	.4
	VI. Diseases of digestive system	219	155	374	74.8
102	Tonsillitis	4	2	6	1.2
103	Ulcer of stomach .....	....	1	1	.2
104	Gastritis	7	3	10	2.0
	Other diseases of stomach	5	6	11	2.2

DEATH STATISTICS—Continued.

From July 1, 1908, to June 30, 1909, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate per 100,000.
		Male.	Female.		
105	Diarrhoea and enteritis (under two years)	85	61	146	29.2
106	Diarrhoea and enteritis (over two years)	23	8	31	6.2
108	Hernia	2	1	3	.6
	Obstruction of intestines.....	24	12	36	7.2
109	Other diseases of intestines...	12	7	19	3.8
110	Acute yellow atrophy of liver..	1	....	1	.2
112	Cirrhosis of liver	8	1	9	1.8
113	Biliary calculi .....	....	3	3	.6
114	Other diseases of the liver	2	6	8	1.6
116	Peritonitis	22	25	47	9.4
117	Other diseases of digestive system	5	6	11	2.2
118	Appendicitis	19	13	32	6.4
	VII. Diseases of Genito-Urinary system	64	61	125	25.0
119	Acute nephritis	17	18	35	7.0
120	Bright's disease	42	39	81	16.2
121	Other diseases of kidneys.....	1	2	3	.6
123	Diseases of bladder	2	..	2	.4
130	Other diseases of uterus .....	..	1	1	.2
133	Other diseases of genito-urinary system	2	1	3	.6
	VIII. Child birth .....	..	46	46	9.2
137	Puerpal septicemia .....	..	17	17	3.4
138	Puerpal convulsions .....	..	4	4	.8
134	Pernicious vomiting .....	..	2	2	.4
136	Ectopic Pregnancy .....	..	1	1	.2
139	Postpartum hemorrhage .....	..	4	4	.8
141	Other causes incident to child-birth .....	..	18	18	3.6
	IX. Diseases of skin	5	2	7	1.4
142	Gangrene	2	..	2	.4
144	Abecess	1	..	1	.2
145	Other diseases of the skin.....	2	2	4	.8
	X. Diseases of locomotor system .....	..	2	2	.4
146	Disease of bones .....	..	1	1	.2
148	Rickets .....	..	1	1	.2
	XI. Malformations	21	8	29	5.8
150	Hydrocephalus	3	..	3	.6
150	Congenital malformation of heart (cynosis)	8	4	12	2.4
150	Other congenital malformations	10	4	14	2.8
	XII. Early infancy	138	87	235	45.0

DEATH STATISTICS—Continued.

From July 1, 1908, to June 30, 1909, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate per 100,000.
		Male.	Female.		
153	Premature birth	56	27	83	16.6
	Congenital debility	19	11	30	6.0
	Inanition	63	49	112	22.0
	XIII. Old age	57	63	120	24.0
154	Old age	57	63	120	24.0
	XIV. Violence	165	71	236	47.2
	Suicides	17	5	22	2.2
155	Poison	4	1	5	1.0
156	Asphyxia	1	..	1	.2
157	Hanging	2	..	2	.4
158	Drowning .....	..	2	2	.4
159	Firearms	7	..	7	1.4
160	Cutting instruments .....	..	1	1	.2
163	Other unspecified means	3	1	4	.8
	Accidents	148	66	214	42.8
165	Fractures and dislocations	10	6	16	3.2
167	Burns and scalds	8	19	27	5.4
169	Heat and sunstroke	2	1	3	.6
171	Lightning	2	..	2	.4
172	Drowning	12	5	17	3.4
174	Inhalation of poisonous gases	5	..	5	1.0
175	Other accidental poisonings	6	4	10	2.0
166	Accidental gunshot wounds	16	3	19	3.8
166	Injuries by machinery	4	..	4	.8
166	Railroad accidents and injuries	16	1	17	3.4
166	Injuries by vehicles and horses	11	1	12	2.4
168	Suffocation	2	1	3	.6
171	Asphyxia at birth	11	6	17	3.4
176	Other accidental injuries	34	10	44	8.8
	Injuries at birth	8	9	17	3.4
	Homicides	1	1	2	.4
176	Homicides	1	1	2	.4
	XV. Ill-defined diseases	138	132	270	54.0
177	Dropsy	3	6	9	1.8
179	Heart failure	38	27	65	13.0
178	Shock after operation	3	5	8	1.6
179	Unknown (unclassified)	94	96	190	38.0
	Stillbirths	69	45	114	22.8
	Stillborn	69	45	114	22.8

DEATH STATISTICS—Continued.

From July 1, 1909, to June 30, 1910, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate. per 100,000.
		Male.	Female.		
	All causes	1,551	1,170	2,721	544.2
	I. Epidemic diseases	144	90	234	46.8
	Typhoid fever	52	24	76	15.2
4	Malarial fever	1	..	1	.2
5	Smallpox	1	..	1	.2
6	Measles	15	10	25	5.0
7	Scarlet fever	17	17	34	6.8
8	Whooping cough	14	5	19	3.8
9	Diphtheria	30	25	55	11.0
9	Croup	3	3	6	1.2
9	Membraneous croup .....	..	1	1	.2
10	Influenza	1	..	1	.2
14	Dysentery	3	3	6	1.2
18	Erysipelas	5	2	7	1.4
19	Mumps	2	..	2	.4
	II. Other general diseases..	174	218	392	78.4
20	Septicemia	15	21	36	7.2
	Tuberculosis	79	107	186	37.2
26	Larynx	1	1	2	.4
27	Lungs	63	92	155	31.0
28	Meninges	7	6	13	2.6
29	Abdominal	1	1	2	.4
31	Tuberculosis abcess	2	..	2	.4
33	Other organs	2	2	4	.8
34	General	2	5	7	1.4
35	Scrofula	1	..	1	.2
	Cancer	46	48	94	18.8
39	Mouth	4	1	5	1.0
40	Stomach and liver	27	16	43	8.6
41	Intestines	1	3	4	.8
42	Genital organs .....	..	5	5	1.0
43	Breast .....	..	5	5	1.0
45	Other organs	14	18	32	6.4
46	Tumors	3	3	6	1.2
48	Rheumatism	5	4	9	1.8
50	Diabetes	13	17	30	6.0
51	Exophthalmic goiter .....	..	3	3	.6
52	Addison's disease	1	1	2	.4
54	Anemia, luekemia	4	12	16	3.2
55	Other general diseases	2	2	4	.8
56	Alcoholism	6	..	6	1.2
	III. Diseases of nervous sys- tem	188	136	324	64.8
61	Meningitis	29	26	55	11.0
62	Locomotor ataxia	2	1	3	.6

DEATH STATISTICS—Continued.

From July 1, 1909, to June 30, 1910, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate. per 100,000.
		Male.	Female.		
63	Other diseases of spinal cord..	..	2	2	.4
64	Apoplexy	46	32	78	15.6
65	Softening of brain	4	..	4	.8
66	Paralysis	16	12	28	5.6
67	General paralysis of insane..	6	2	8	1.6
68	Other forms of mental disease	4	1	5	1.0
74	Other diseases of brain	15	8	23	4.6
69	Epilepsy	10	4	14	2.8
70	Infantile paralysis	18	12	30	6.0
71	Convulsions	34	36	70	14.0
72	Tetanus	2	..	2	.4
76	Other diseases of nervous system	2	..	2	.4
	IV. Diseases of circulatory system	69	48	117	23.4
77	Pericarditis	1	1	2	.4
78	Endocarditis	13	6	19	3.8
79	Heart disease	47	30	77	15.4
80	Angina pectoris	3	1	4	.8
81	Diseases of arteries	1	..	1	.2
82	Embolism and thrombosis	2	7	9	1.8
83	Diseases of veins .....	..	2	2	.4
86	Other diseases of circulatory system	2	1	3	.6
	V. Diseases of respiratory system	161	106	267	53.4
	Laryngitis	1	2	3	.6
88	Other diseases of Larynx	2	..	2	.4
90	Acute bronchitis	8	2	10	2.0
92	Broncho pneumonia	24	18	42	8.4
93	Pneumonia	105	70	175	35.0
94	Pleurisy	7	5	12	2.4
95	Congestion of lungs	4	3	7	1.4
97	Abcess of Lungs	3	4	7	1.4
98	Asthma and emphysema	3	4	7	1.4
87	Lagrippe	1	..	1	.2
99	Hemorrhage of lungs	2	1	3	.6
	Other diseases of respiratory system	1	1	2	.4
	VI. Diseases of digestive system	149	135	284	56.8
100	Diseases of mouth	1	..	1	.2
103	Ulcer of stomach .....	..	1	1	.2
104	Gastritis	18	9	27	5.4
	Other disease of stomach....	4	2	6	1.2

DEATH STATISTICS—Continued.

From July 1, 1909, to June 30, 1910, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate. per 100,000.
		Male.	Female.		
105.	Diarrhoea and enteritis (under two years)	52	45	97	19.4
106	Diarrhoea and enteritis (over two years)	5	13	18	3.6
108	Hernia	11	3	14	2.8
	Obstruction of intestines	10	10	20	4.0
109	Other diseases of intestines..	4	6	10	2.0
110	Acute yellow atrophy of liver..	1	1	2	.4
112	Cirrhosis of liver	10	4	14	2.8
114	Other diseases of liver	2	4	6	1.2
115	Diseases of spleen .....	..	1	1	.2
116	Peritonitis	19	25	44	8.8
117	Other diseases of digestive system	2	2	4	.8
118	Appendicitis	10	9	19	3.8
	VII. Diseases of genito-urinary system	65	40	105	21.0
119	Acute nephritis	23	13	36	7.2
120	Bright's disease	40	18	58	11.6
121	Other diseases of kidneys....	1	3	4	.8
123	Diseases of bladder	1	1	2	.4
130	Other diseases of uterus .....	..	2	2	.4
131	Ovarian tumor .....	..	3	3	.6
	VIII. Child birth .....	..	29	29	5.8
137	Puerpal septicemia .....	..	9	9	1.8
138	Puerpal convulsions .....	..	3	3	.6
139	Postpartum hemorrhage .....	..	6	6	1.2
141	Other causes incident to child-birth .....	..	11	11	2.2
	IX. Diseases of Skin	3	4	7	1.4
142	Gangrene	1	2	3	.6
145	Other diseases of skin	2	2	4	.8
	X. Diseases of locomotor system	2	1	3	.6
146	Disease of bones	1	..	1	.2
147	Disease of joints	1	..	1	.2
148	Richitis .....	..	1	1	.2
	XI. Malformations	19	11	30	6.0
150	Other congenital malformations heart (cynosis)	12	7	19	3.8
	XII. Early Infancy	7	4	11	2.2
153	Premature birth	97	100	197	39.4
	Congenital debility	40	39	79	15.8
	Inanition	8	4	12	2.4
		49	57	106	21.2

DEATH STATISTICS—Continued.

From July 1, 1909, to June 30, 1910, figured on a basis of 500,000 population.

Classification No.	Cause of Death.	Sex.		Total.	Death rate. per 100,000.
		Male.	Female.		
	XIII. Old age	72	48	120	24.0
154	Old age	72	48	120	24.0
	XIV. Violence	199	43	242	48.4
	Suicides	19	3	22	4.4
155	Poison	4	1	5	1.0
157	Hanging	6	2	8	1.6
159	Firearms	6	..	6	1.2
160	Cutting Instruments	3	..	3	.6
	Accidents	179	38	217	43.4
165	Fractures and dislocations....	24	..	24	4.8
166	Burns and scalds	14	6	20	4.0
169	Heat and sunstroke	3	2	5	1.0
170	Cold and freezing	2	2	4	.8
171	Lightning	6	1	7	1.4
172	Drowning	21	1	22	4.4
174	Inhalation of poisonous gases	5	1	6	1.2
175	Other accidental poisonings...	5	10	15	3.0
166	Accidental gunshot wound ...	9	1	10	2.0
166	Injuries by machinery	1	..	1	.2
166	Railroad accidents and injuries	19	..	19	3.8
166	Injuries by vehicles and horses	9	1	10	2.0
166	Injuries by electric cars.....	6	1	7	1.4
168	Suffocation	1	..	1	.2
171	Asphyxia at birth	9	1	10	2.0
176	Other accidental injuries.....	34	6	40	8.0
	Injuries at birth	11	5	16	3.2
	Homicides	1	2	3	.6
176	Homicides	1	2	3	.6
	XV. Ill-defined diseases	134	111	245	49.0
177	Dropsy	5	4	9	1.8
179	Heart failure	47	31	78	15.6
179	Other ill-defined diseases ....	..	1	1	.2
178	Shock after operation	1	6	7	1.4
179	Unknown (unclassified)	81	69	150	30.0
	Stillbirths	75	50	125	25.0
	Stillborn	75	50	125	25.0

LICENSED EMBALMERS.

The licensed embalmers of the state have been gradually increasing in numbers. There are now 187 in good standing. The State Board of Embalmers has the following membership:

E. F. Gilbert, President, Casselton, N. D.
M. Norman, Vice President, Grand Forks, N. D.
H. C. Flint, Treasurer, Jamestown, N. D.
J. Grassick, M. D., Secretary, Grand Forks, N. D.
Andrew Miller, Attorney General, Bismarck, N. D.

They meet regularly in February and August of each year for the examination of candidates and for the transaction of other routine business.

The Funeral Directors have a live organization. They have an annual meeting of three days duration which is usually held at the State University. They employ a demonstrator who gives practical instruction in the science and art of embalming as well as in subjects of asepsis, antiseptics, disinfection, funeral directing, etc.

The State Board of Embalmers, although a separate organization, is in close touch with the state board of health. They have the same secretary and they work in harmony for the control of infectious diseases. In fact the Licensed Embalmers of the state are an active factor in our health machinery and this is necessarily so; for, as was stated by the secretary in an address before the Funeral Directors Association, February 23, 1910:

"In addition to your duty to the dead you have a very important one to perform to the living, to yourself and to society. The up-to-date undertaker is expected to be an authority on sanitary matters. This is nothing more or less than might be expected. Associated as he is with every case of sorrow in his neighborhood and knowing that a large class of diseases are communicable and consequently preventable, he is by reason of his calling and the circumstances of his environment the one to whom the anxious friends turn for advice and direction. Hence, I say your duty to society demands that while you give the dead all the care and attention that the case demands that your best efforts should be directed in the paths of prevention of the spread of disease and be able to adopt the necessary measures that others might not contract it. This implies a practical knowledge of the science of bacteriology, the etiology of disease, the principles of hygiene and right living, together with a working knowledge of fumigation and disinfection in its various details. You in this matter share honors with the doctor of medicine whose chief aim is to make the world brighter and better and his fellows healthier and happier. The more good sanitation we secure the more good health habits we teach, the more anti-tuberculosis crusades we wage the less need has the public for the doctor and the undertaker; and yet we are giving the public the results of our labor, our investiga-

tion and our knowledge as never before in the history of the world. There is still much to be done and the progressive undertaker should get on the firing line and do his part in forcing the enemy to evacuate his position. What is true of consumption is true in a general way of all communicable diseases. They are all improvements and all amenable to the same rules."

The finances of the board are in a satisfactory condition as indicated by the following report filed with the governor of our state, November 1, 1910:

FINANCIAL REPORT—STATE BOARD OF EMBALMERS.

For the year ending October 31, 1910.

RECEIPTS.

November 1, 1909, balance on hand	\$371.77
March 28, 1910, received from secretary	474.00
August 12, 1910, received from secretary	55.00
Total	<u>\$900.77</u>

DISBURSEMENTS.

March 29, 1910, dues National Association	\$ 10.00
March 29, 1910, H. C. Flint, expenses.....	15.70
March 29, 1910, M. Norman, expenses	34.40
March 29, 1910, J. Grassick, expenses	22.80
March 29, 1910, J. Grassick, expenses	105.30
May 28, 1910, J. Grassick, expenses	100.00
August 12, 1910, J. Grassick, expenses	33.95
August 12, 1910, E. F. Gilbert, expenses	40.00
August 12, 1910, M. Norman, expenses	10.00
August 12, 1910, H. C. Flint, expenses	47.30
November 1, 1910, balance on hand	<u>481.32</u>

Total \$900.77
Jamestown, N. D., November 1, 1910.

(Signed) H. C. FLINT,

Treasurer State Board of Embalmers.

(Signed) J. GRASSICK, M. D.,

Secretary State Board of Embalmers.

The last meeting of our legislature amended section 344 of article 17 of the Revised Codes of 1905 to read as follows:

"Every person who wishes to practice the profession of embalming dead human bodies in the State of North Dakota or prepare for shipment any dead human body shall appear before the State Board of Embalmers, or such members thereof designated, as hereinbefore provided, for examination on their knowledge of embalming, sanitation preservation of the dead, disinfection of a diseased person and the apartments, bedding, clothing, excretions and anything likely to be affected in case of death from infectious or contagious disease, in accordance with the rules and regulations of the State Board of Health. Such examination shall be in writing and all examination papers shall be kept on record by said State Board of Embalmers; and if the applicant be of good moral character and passes a satisfactory examination, then the said board shall issue said applicant, on payment of the sum of five dollars to the treasurer of said board, a license to practice the profession of

embalming for a term of one year. If the applicant desires to renew his license the said board shall grant it, except for cause and the annual fee for the renewal of the license shall not exceed three dollars.

It will thus be seen that the laws of North Dakota require all embalmers practicing in the state to be licensed, and only licensed embalmers can prepare for shipment dead human bodies from point to point in North Dakota or from any point in North Dakota to any other state. This provision protects the traveling public from possible infection from dead bodies improperly prepared.

The following is a list of embalmers in good standing:

License Number, Name and Address.

62	Aamoth, John	Park River
140	Anderson, Jake	Edgeley
159	Arsenault, A. J.	Williston
96	Argue, F. A.	Hamilton
120	Ashely, S. H.	Grand Forks
129	Axdal, J. H.	Cavalier
111	Bell, R. A.	Enderlin
213	Bennett, O. R.	Judd
184	Berge, J. I.	Northwood
195	Boardman, M.	Oakes
95	Bodmer, George A.	Kenmare
162	Bolander, John	Kenmare
44	Bonine, George J.	Balfour
40	Borman, M. M.	Abercrombie
245	Bresee, B. A.	Britton, S. D.
65	Bracklesburg, H. P.	Madelia, Minn.
124	Bracklesburg, Mrs.	Sherwood
229	Bundy, Harry A.	Oakes
79	Burnham E. A.	Four Oakes, N. C.
50	Burwell, T. J.	Ryder
39	Bushee, R. M.	Billings, Mont.
32	Butson, S.	Hillsboro
210	Calkins, F. L.	Deering
156	Calnon, John W.	Berthold
118	Challey, John	Lisbon
134	Champion, Wm. J. N.	Rugby
2	Chandler, William	Grafton
204	Comer, LeRoy	Malvern, Iowa
218	Conlan, Wm. J.	Hensal
219	Connor, Jos. E.	Stanley
212	Cox, Carlton N.	Ray
101	Davis, A. D.	Dickinson
63	Davis, L. A.	Dickinson
203	Derenthal, A. E.	Lidgerwood
105	Dickinson, Albert	Velva
130	Dickson, George	Rugby

155	Dixon, Percival	Rolla
52	Dougherty, J. E.	Fargo
114	Dougherty, T. R.	Hibbing, Minn.
33	Draper, C. E. U.	Mandan
192	Donovan, John B.	Bowbells
102	Eddy, P. W.	Jamestown
93	Edwards, W. M.	Larimore
54	Engdahl, A. G.	Kenmare
18	Engle, W. G.	Enderlin
216	Ferguson, C. V.	Glenburn
58	Field, E. G.	Bismarck
36	Flint, H. C.	Jamestown
84	Folker, Chas.	Hannah
243	Fulkerson, G. E.	Newville
34	Gaard, Jacob N.	Fargo
208	Gansz, Adam	Granville
142	Garrison, T. S.	Hartford, Ind.
187	Gault, E. O.	Beach
72	Gilbert, E. F.	Casselton
125	Gilbertson, E. W.	Devils Lake
121	Gile, W. D.	Crary
153	Godall, Alonzo	St. Paul, Minn.
226	Granrud, Chris. A.	Leeds
196	Haight, W. Z.	Oakes
191	Hamilton, W. D.	Fisher, Minn.
3	Hanson, Ole	Grafton
143	Hanson, H. O.	Harvey
221	Hegland, E. T.	Adams
144	Heinrichs, F. W.	Minneapolis, Minn.
232	Hinman, R. A.	Alexander
128	Hodgdon, A. S.	Islay, Alta
200	Hoeschen, Chris. J.	Melrose, Minn.
176	Holberg, N. O.	Valley City
73	Holbrook, W. J.	Rugby
89	Holte, Ralph	Ellendale
242	Holte, N. T.	Ellendale
85	Howden, R. J.	McHenry
194	Hughes, E. J.	Dickinson
91	Hurst, S. Y.	Devils Lake
119	Irvine, A. H.	Linton
225	Jensen, G. C.	Edinburg
100	Johnsgaard, E.	Bottineau
237	Johnson, A. L.	Leeds
77	Johnson, R. B.	Hallock, Minn.
135	Johnson, David	Park River
224	Johnson, Frank E.	Beaudette, Minn.
110	Johnston, P. R.	Milton
231	Kasper, Geo. F.	Mott

139	Kayser, Otto	Devils Lake
178	Kennelly, T. G. C.	Mandan
209	Kent, John	Lansford
172	Kinnaird, J. L.	New Rockford
211	Kipp, James E.	Edgeley
53	Kirchner, August H.	Bowbells
48	Kvalness, N. M.	Valley City
173	LaChance, D. M.	Minneapolis, Minn.
61	LaFrance, P. E.	Rolla
175	Lee, F. H.	Staples, Minn.
206	Lester, L. Eugene	Breckenridge, Minn.
103	Lestrud, O. A.	Park River
29	Lonsburry, B. F.	Wahpeton
238	Lozier, Lulu P.	Lisbon
239	Lozier, W. H.	Lisbon
220	Lutzgen, John W.	Glen Ullin
71	Mallough, M. S.	Wimbleton
180	Mangan, M. J.	Hettinger
214	Marcellus, A. V.	Wilton
207	Markland, Ernest C.	Scranton
76	Maxwell, J. W.	Grafton
223	McIntyre, Wm.	Casseltown
74	Mecker, H. F.	Jamestown
138	Mellinger, C. A.	Mohall
193	Meyers, Wm. H.	Warwick
166	Miles, A. F.	Selby, S. D.
127	Miller, Geo.	Drayton
108	Morrison, U. G.	Granville
157	Murphy, John H.	Rolette
228	Murphy, Jas. H.	Rolette
106	Myhre, C. J.	Kindred
151	Neuenschwander, O.	Fessenden
185	Nichols, J. G.	Churchs Ferry
205	Nick, Jacob, Jr.	Grand Forks
122	Norman, M.	Grand Forks
37	Norman, N.	Grand Forks
189	Norman, Paul V.	Grand Forks
97	Ohnstad, Charles	Willow City
68	Olmstad, W. A.	Hannaford
56	Olson, L. H.	Willow City
107	Olson, C. A.	Cooperstown
70	Olson, H. W.	Bowman
15	Olson, C. H.	Cando
137	Orr, F. G.	Mott
215	Orr, Jas. E.	Lakota
244	Palen, F. F.	Hillsboro
171	Peck, E. L.	Bismarck
78	Peterson, Ole	Fosston, Minn.

57	Peterson, Theo.	Aneta
86	Petrie, G. W.	McCluskey
38	Pico, Henry	Cavalier
148	Plimpton, H. C.	Miles City, Mont.
240	Portz, A. L.	Jamestown
28	Powlison, E. Q.	Wheatland
98	Prentice, W. D.	Cogswell
165	Price, H. E.	Langdon
235	Price, D. J.	Manning
201	Priewe, Emil G.	Casselton
141	Pringle, E. H.	Lisbon
88	Proctor, H. G.	Jamestown
82	Prýdz, C. W. J.	Litchville
69	Reese, T. N. J.	McIntosh, Minn.
24	Rice, J. F.	Fargo
197	Rief, A. B.	Judson
87	Robertson, J. O.	Carrington
234	Robinson, T. B.	Jamestown
217	Roehm, Charles	Devils Lake
115	Ross, Ralph W.	Calvin
181	Rousevell, G. A.	Wahpeton
183	Rowan, J. W.	Minot
182	Rudh, Albert	Casselton
222	Schlachter, E. E.	Anamoose
64	Schlumpberger, Al.	Burlington, Iowa
227	Seaver, Herbert K.	Buxton
55	Sells, Mrs. Eva	Estervan, N. W. T.
146	Sieberlick, J. M.	Devils Lake
169	Silvius, A. J.	Buffalo Springs
152	Simmons, E. L.	Kenmare
202	Smith, W. B.	Pollock, S. D.
80	Somdahl, M.	Valley City
147	Specht, F. H.	Underwood
132	Steen, C. O.	Page
164	Stiemke, Louis	Forman
116	Stockstad, O. A.	Milnor
60	Thomas, G. M.	Williston
113	Toensing, E. H.	Pingree
186	Toomey, A. E.	Edmore
43	Van Fleet, J. D.	Larimore
123	Vaughan, C. F.	Wahpeton
188	Vetter, Mrs. J. A.	Mandan
154	Walker, Roy E.	Valley City
81	Washburn, E. D.	Hope
241	Wasem, B. F.	Fargo
198	Watschke, Fred	Munich
47	Weagant, Chas.	Minot
160	Weaver, Jesse H.	Bottineau

230	Wehlitz, J. H.	Steele
41	Wellen, Adolph	Starkweather
126	Whillis, F. M.	Lidgerwood
90	Whipperman, M. A.	Hankinson
233	White, J. J.	Cogswell
199	Wilbert, Jacob	LaMoure
149	Wilson, W. H.	Aberdeen, S. D.

LIST OF LICENSED PHYSICIANS.

List of physicians licensed to practice in North Dakota alphabetically arranged as to names.

Name	Address
Aaker, A. O.	Velva
Abplanalp, I. C.	Ray
Ahrens	Casselton
Alexander, Ida M.	Forman
Alexander, J. C.	Tower City
Almklov, L.	Cooperstown
Altnow, O. H.	Mandan
Ames, A. J.	Forbes
Anderson, C. O.	Willow City
Anderson, A. G.	Hillsboro
Arneberg, J. G.	Grand Forks
Arneson, O. A.	McVile
Arnold, E. W.	Fordville
Aronsohn, D.	Maxbass
Artz, P. G.	Jamestown
Bacchus, A. S.	Wales
Bailey, F. H.	Fargo
Bailey, S.	Bailey
Bailie, W. F.	Hunter
Baker, D. A.	Bowman
Baldwin, W. P.	Casselton
Baldwin, L. B.	Jamestown
Balfour, N.	Rock Lake
Barbour, H. W.	Edgeley
Barrette, J. H.	Alexander
Bartley, W. M.	Sheyenne
Barton, C. A.	Heart
Bates, W. H.	Grand Forks
Beach, R. H.	Dickinson
Bean, O. G.	Wolcott
Bear, DeWitt	Driscoll
Beek, R. H.	Lakota
Begstrup, O. N.	Rugby
Bell, Daniel	Kenmare
Belyea, E. H.	Williston
Benn, F. G.	Kulm
Bennett, C. E.	Aneta
Benson, O. T.	Glen Ullen

Bentzen, Olof	Grand Forks
Beresna, J. F.	New Salem
Berg, S. A.	Aneta
Bibby, Elias	Chaffee
Blatherwick, W. E.	Drake
Blair, A. K.	Hampden
Blanchard, H. B.	Columbus
Bodenstab, W. H.	Bismarck
Bonde, G.	Gwinner
Bordwell, F. A.	Marmarth
Boslaugh, A. W.	Dwight
Bowen, J. W.	Dickinson
Boyd	Manfred
Bradley, W. W.	Forman
Bradstadt, J. P.	Oakes
Brandt, A. M.	Bismarck
Brimi, C. L.	Cooperstown
Brenkle, F. J.	Kulm
Brown, Wm. G.	Fargo
Brown, W. M.	St. Thomas
Brown, F. R.	McClusky
Bunting, F. E.	Mandan
Burrows, F. N.	Bathgate
Burgman, F. A.	Minot
Bush, U. F.	Fargo
Burton, Paul H.	Fargo
Bussen, L. H.	Richardton
Caldwell, T. J.	Wimbledon
Carter	Warwick
Carpenter, C. A.	Fargo
Carr, Andrew	Minot
Campbell, F. J.	Fargo
Campbell, T. R.	Arthur
Campbell, R. C.	Braddock
Campbell, R. D.	Grand Forks
Canfield, H.	Hatton
Campbell, C. C.	Ashley
Campbell, J. W.	Fargo
Campeau, J. B.	Olga
Call, A. M.	Rugby
Callendar, E. N.	Fargo
Caldwell, G. H.	University
Cady, I. M.	Taylor
Chadbourne, A. G.	Kramer
Chambers, C. L.	Bismarck
Charest, J. C. R.	Fargo
Chagnon, Nap.	Horace
Christy, F. J.	Burlington

Church, R. J.	Lankin
Christenson, W.	Lidgerwood
Clark, Sidney B.	Buffalo
Claubaugh, W. A. R.	Rolette
Clark, Ira D.	Harvey
Coffin, A. D.	Erie
Coffin, G. H.	Dogden
Collison, H. M.	Rugby
Colwell, R.	Belfield
Combs, Frank B.	Grano
Converse, E. A.	Mott
Cosgrove, J. H.	Belfield
Cowper, W. L.	Michigan
Cox, R. M.	Edmore
Countryman, J. E.	Grafton
Crosby, C. E.	Oriska
Crary	Minnewaukon
Crawford, John	Esmond
Crane, C. S.	Grand Forks
Cramond, J. E.	Rugby
Clay	Bowden
Curtiss, C. E.	Haynes
Culver	McKenzie
Cuffee, R. C.	Concrete
Currie, C. C.	Kingsley
Cuthbert, W. H.	Devils Lake
Curtiss, A. R.	Kensal
Currie, A. N.	Hatton
Crusial, J. B.	Fargo
Darrow, E. M.	Fargo
Dahl, P.	Devils Lake
Darland, F. L.	Sawyer
Davis, J. S.	Granville
Davis, H. A.	Dickinson
Devine, R. H.	Wahpeton
Devine, J. R.	Lansford
Deason, F. W.	St. Thomas
DePuy, R. G.	Jamestown
Dillon, J. G.	Fargo
Distad, O. E.	Williston
Dow, A. L.	Bowbells
Douglas, F. A.	Fessenden
Dochterman, L. B.	Williston
Donovan, E. I.	Langdon
Durnin, Chas.	Westhope
Durnin, G. A.	Westhope
Duggan, F. J.	Grand Forks
Duncan, J. A.	Upham

DuBois, W. L.	Towner
Dunn, J. C.	Stanley
Drew, G. F.	Crary
Durkee, C. A.	Great Bend
Eastman, L. G.	Krem
Eide, J. W.	Harvey
Eggers, August	Grand Forks
Ekern, Andrew	Grand Forks
Erskine, G. F.	Sarles
Engstad, J. E.	Grand Forks
Eltum, F. J.	Velva
Erenfeld, H. M.	Anamoose
Emanuel, H. M.	Milnor
Evans, R. M.	Minto
Fawcett, W. C.	Starkweather
Ferguson, S. M.	Brockett
Fisher, H.	Lansford
Fisher, A. M.	Bismarck
Fisher, Stephen	Dickinson
Fish, G. H.	Hope
Fjelde, H. O.	Abercombie
Field, A. B.	Forest River
Fiske, Daniel A.	Carpio
Firzmaurice, E. S.	Mohall
Flath, A.	Churches Ferry
Flower,	Gackle
Flatten, A. A.	Edinburg
Folsom, E.	Fargo
Fowler, H. H.	Stanton
Foster, W. B.	Mandan
Furness, G. B.	Mandan
Furman, R.	Richardton
Frankson, Benj.	Rugby
Gaslee, G. L.	Grandin
Gaebe, O. C.	New Salem
Galbraith, J. C.	Cavalier
Gerrish, W. A.	Jamestown
Godfrey, W. H.	Russel
Gowenlock, H. J.	Gardner
Gibson, S. G.	Langdon
Gustafson, E. V.	Osnabrock
Green, L. B.	Monango
Grassick, J.	Grand Forks
Gislason, G. J.	Grand Forks
Grant, Geo.	Wishek
Goodrick, H. E.	Fort Yates
Gronvold, A. C.	Fort Ransom
Greenman, N. H.	Fairmont

Guest, A. W.	Jamestown
Goseth, G.	Jamestown
Girvin, R. B.	Cleveland
Glaspell, G. W.	Grafton
Gronvold, F. C.	Adams
Griffin,	Portal
Gray, W. H.	Wheelock
Halldorson, M. D.	Souris
Halldorson, M.	Park River
Haugen,	Davenport
Hornell, L. C.	Casselton
Hunter,	Hunter
Huntley,	Leonard
Hotchkiss, W. M.	New Rockford
Hogue, R. R.	Linton
Healy, H. H.	Grand Forks
Hetherington, J. E.	Reynolds
Hamilton, E. F.	Bentley
Hillis, A. E.	LaMoure
Hanson, Geo. W.	Charlson
Hall, Alex	Mandan
Howg, E. M.	Petersburg
Harris, C. B.	Pembina
Hood, E. C.	Drayton
Householder, H. A.	Center
Hoff, G. C.	Sheldon
Horsman, A. T.	Devils Lake
Howard, C. E.	Cogswell
Hubbard, T. G.	Cayuga
Heimark, A. J.	Finley
Hedding, J. A.	Hope
Harwood, C. B.	Hope
Hattendorf, Jesse	Jamestown
Holt, G. H.	Jamestown
Henning, A. J.	Taylor
Haagenon, E. C.	Hillsboro
Heinz, Chas.	Clifford
Harris, F. C.	Cando
Hillis, Samuel J.	Berthold
Husser, Arthur A.	Berthold
Hanson, Geo. C.	Chilcot
Halverson, H. L.	Des Lac
Halliday, James	Mohall
Hagen, E. J.	Williston
Irwin, S. H.	Grand Forks
Irish,	Dickey
Ivers, M. N.	Abercrombie
Iverson, L. N.	Christine

Irby	Lankin
Jacobson	Harvey
Jacobi, W. K.	Towner
James, H. J.	Bathgate
Jamieson, A. J.	Wheatland
Jameson, D. P.	Osnabrock
Jelstrup, C.	Pekin
Jenson, M.	Cottonwood Lake
Johns, John G.	Hettinger
Johns, S. M.	Velva
Johnson, J. A.	Bottineau
Johnson, J. H.	Lisbon
Jones, W. D.	Devils Lake
Jones, C. S.	Williston
Joistad, A.	Fairdale
Joyce, Martin	Harvey
Kaess, A. J.	Fargo
Kachelmacker, C.	Fargo
Kaufman, Carl	Stirum
Kearney, P. F.	Glen Ullen
Keats, L.	Harvey
Kennedy,	Grafton
Kennedy, W. J.	Enderlin
Kennedy, E. R.	White Earth
Kellogg,	Tolna
Kermott, Louis H.	Minot
Keys, Morton I.	Sherwood
King, C. J.	McHenry
King, F. J.	St. Thomas
King, W. W.	Milnor
Kitchen, J. L.	Sentinel Butte
Kiteley, W. E.	Fairmount
Klein, N. H.	Hebron
Knutson, O. A.	Buxton
Knutson, K. O.	Glenburn
Kranz, M.	Mandan
Kron, L. O.	Williston
Labbitt, G. H.	Enderlin
LaBerge, P. U.	Williston
LaMoure, H. A.	Grafton
Lancaster, W.	Powers Lake
Lancaster, B.	Crosby
Lansing, C.	Courtenay
Lang, L. A. J.	Sanborn
LaMont, J. G.	Cando
LaRose, V. J.	Bismarck
Larber	Rhame
Laudry, L. H.	Walhalla

Law, H. W. F.	Hannah
Law, I. M.	Munich
Lee, W. N.	Valley City
Lee, Lulu	Valley City
Leedahl, O. S.	Palermo
Lea, M. A.	Edmore
Leith, J. D.	Petersburg
Lemery, B. D.	Inkster
Lemieux, D.	Dunseith
Lenfest, John W.	Bowbells
Leslie, I. C.	Hannaford
Lieben, E. A.	McHenry
Limburg, A. M.	Bowbells
Linder, E. R.	Egeland
Lindsey, H. J. R.	Scranton
Livingston, L. J.	Maxbass
Livingston, J. W.	Bantry
Lodge, F. B.	Steele
Lohrbauer, Ejnar	Lakota
Lommen	Mayville
Longstreth, W. E.	Kensal
Lord, Bertram E.	Glenburn
Lorenzen, D.	New Salem
Lund	Leeds
Lunnel	Leeds
Lynde, Roy	Ellendale
Lyman, F. C.	Rolette
Lyle, W. D.	Havana
MacDonell, C. A.	Hankinson
MacKenzie, J. R.	New Rockford
MacKenzie, J. Ross	Carrington
MacLachlan, Chas.	New Rockford
McCannel, Alex. J.	Minot
McCannel, Archie D.	Minot
McCallum, Chas.	Portal
McClusky, O. W.	Carrington
McDonald, A. W.	Valley City
McDonald, A. L.	Grand Forks
McEssey, W. E.	Anamoose
McGregor, M.	Fargo
McIntosh, G. J.	Devils Lake
McIntyre, Geo.	Mayville
McGurren, C. J.	Devils Lake
McKay, A. R.	Bottineau
McKay	Clyde
McKay, J. F.	Bowesmont
McLachlan, T. M.	Bismarck
McLean, R.	Gilby

McLean, Neil	Kenmare
McManus, W. F.	Grand Forks
McManus, F. W.	Buford
McMurty, W. C.	Wolford
McNab, A. B.	Beach
McPherson, T. A.	Rugby
McQueen, W. W.	Langdon
McReynolds, C. E.	Goodrich
Maercklein, I. R.	Oakes
Maercklein, F. W.	Oakes
Maercklein, A. G.	Ellendale
Maercklein, O.	Dickinson
Maercklein, E. H.	Ashley
Maercklein, I.	Wyndmere
Maercklein, C. J.	Lidgerwood
Mallarian, K. H.	Fargo
Mann, J. F.	Bowman
Marsden, C. S.	Grand Forks
Martin, T. P.	Streeter
Manley, J. R.	Niagara
Mathews, G. A.	Napoleon
Mayland, L. L.	Ryder
Meadows, E. M.	Oakes
Meckstroth, L. W.	Wahpeton
Meidell	Williston
Melvin, R. W.	Beach
Merchant, F. M.	Ellendale
Meyers, L. W.	Marion
Mickelson	Reeder
Mitchell, S.	Mapleton
Miracle, Mort.	Edgeley
Miller, H. W.	Jamestown
Miller, G. Herbert	Sherwood
Mordorf, M.	Hettinger
Montgomey, C. B.	Overly
Morris, A. C.	Fargo
Montgomery, C. J.	Neché
Montgomery, John	Ardoch
Morris, V. G.	Schafer
Morrison, John R.	Carpio
Moore, Dwight, S.	Jamestown
Moore, Wm. H.	Sykeston
Moffat, Geo.	Donnybrook
Moeller, Heinrich	Maddock
Moeller, J. O. L.	Ray
Moats, V. H.	Epping
Mowatt, W.	Mylo
Musens, H. B.	Beach

Murray, K. M.	Scranton
Munro, N. A.	Bowman
Mugan, J. J.	Langdon
Murphy, F. E.	Grand Forks
Murphy, G. O.	Leipzig
Mulligan, Thomas	Grand Forks
Movius, A. H.	Jamestown
Mykelstad, N.	Williston
Nelson, Walter P.	Fargo
Neilson, Ford	Nekoma
Newlove, Jas. T.	Minot
Newlove, John W.	Minot
Newmann, A. B.	Carson
Neukamp, Hugo	McClusky
Nichols, Will	Fargo
Nichols, Arthur A.	Fargo
Nicholson, A. S.	Max
Nicholson, C. G.	Lawton
Niles, E. M.	Cathay
Nolte, W. C.	Dazey
Norbey	Rolette
Norris	Martin
Norton F. P.	Minto
Nugent, O. B.	Harvey
O' Brien, T.	Wahpeton
O'Keefe, Henry	Grand Forks
Olson, Christen	Berlin
Olson	Minot
Oswald, J. MacD.	Larimore
Owenson, H. A.	Deering
Oyen, Per	Fessenden
Patterson, T. C.	Lisbon
Patterson, A. G.	Lisbon
Patterson	Edinburg
Parker, C. H.	Rutland
Paulson, Andrew J.	Flaxton
Peake, A.	Valley City
Peake, F. M. C.	Valley City
Peake, F.	Jamestown
Perrin, J. A.	Antler
Peterson	Northwood
Perkins, G. A.	Dickinson
Pence, Roy W.	Minot
Pence, I. R.	Minot
Piper, F.	Cathay
Pierson, C. M.	Ambrose
Platou, L. S.	Valley City
Plante, J. H.	Jud

Platt, O. D.	Granville
Plourde, W. A.	Overly
Porter, W. H.	Calvin
Poort, J. J.	Strausburg
Prey, E. A.	Valley City
Pryse, T. S.	Dawson
Quain, E. P.	Bismarck
Quain, Fannie Dunn	Bismarck
Quinn, W. M.	Zeeland
Quick, J. V.	Wahpeton
Rainville, Samuel	Tolley
Rasmussen, F. P.	Kathryn
Redmon, F. E.	Mott
Reilly, J. J.	Milton
Ramstad, N. O.	Bismarck
Ribble, G. B.	LaMoure
Rice, Paul F.	Cannon Ball
Rindlaub, J. H.	Fargo
Rindlaub, M. P.	Fargo
Rindlaub, Elizabeth P.	Fargo
Ritchie, C. K.	Velva
Ringo, G. Roy	Minot
Robb	Ross
Roberts, F. J.	Cando
Robertson, W. F.	Dunseith
Robillard	Olga
Rogers, R. V.	Bottineau
Rogers	Portland
Rogers, Jos.	Donnybrook
Roan, M. W.	Bismarck
Rollefson, C.	Ambrose
Ransom, E. M.	Minot
Rowe, H. J.	Casselton
Rounsvell, A. L.	Larimore
Rucker, F. T.	Mott
Ruedell, G. L.	Plaza
Ryder, B. R.	Oakes
Sand, Olof	Fargo
Savre, M. T.	Sharon
Saylor, H. L.	Cogswell
Savage, J. L.	Fargo
Scanlan, Wm.	Page
Schultz, L.	Minnewaukan
Schuler	Brinsmade
Schipfer, L. A.	Bismarck
Schussler, Otto	Mandan
Sandven, N. O.	Park River
Scott, W. W.	Walhalla

Scott, Robt. A.	Cavalier
Scott, W. B.	Ray
Seerley, C. C.	Gwyther
Sehus, O. M.	Hatton
Shortridge, W. R.	Flasher
Shepard G. P.	Gackle
Sherping, E. H.	Wyndmere
Shields, N. J.	Lidgerwood
Simons, C. E.	Perth
Simmons	Lisbon
Sihler, W. F.	Devils Lake
Sinclair, G. C.	Alice
Skelsey, A. W.	Fargo
Smith, J. G.	Beach
Smith, J. Alder	York
Smith, J. O.	Overly
Smith, Oscar	Manning
Smith, J. C.	Thompson
Smith, C.	Devils Lake
Smith, L. C.	Dickinson
Smith, S. E.	Dickinson
Smyth, F. R.	Bismarck
Snyder, J. E.	Hazleton
Sorkness, Paul	Fargo
Soss, E. L.	Carrington
Soley, L. A.	Neché
Sorenson, A. R.	Barton
Soper, F.	Montpelier
Spear, E. D.	Nome
Spicer, C. E.	Litchville
Spielman, Geo. H.	Flasher
Spottswood, C. P.	Hankinson
Stixrud, F. M.	Litchville
Stough, R. W.	Beach
Stuart, M. A.	Omersee
Stribbling, N. J.	New England
Steeves, E. O.	Berwick
Stone, E. C.	Balfour
Staley, John	Mandan
Strong, T. J.	Enderlin
Steele, G. A.	Havana
Steel, D. C.	Fairmount
Stark, Geo. A.	Mandan
Stickney, V. H.	Dickinson
Statler, O. J.	Ardoch
Stone, G.	Minot
Stobie, R. H.	Tioga
Stokes, P. A.	Fullerton

Strauss, F. B.	Bismarck
Stephenson, J. L.	Ellendale
Stackhouse, C. E.	Bismarck
Stuart, Zella White	Grand Forks
Surley, C. C.	Fort Rice
Suter, J. C.	Grafton
Swenson, A.	Bisbee
Swarthout, E. F.	Streeter
Taylor, J. D.	Grand Forks
Taylor, John Dempsey	Minot
Thelan, W. P.	Wilton
Thomas, A. W.	Overly
Thompson, R. C.	Wilton
Thurber, H. R.	Esmond
Thorvilson, O. A.	Denbigh
Thyng, D. K.	Willow City
Titus, Chas. J.	Minot
Todd, G. D.	Medina
Trainor, M. E.	Stanley
Trees	Hurdsfield
Trimbo, J. H.	Harvey
Trones, Nils	Fargo
Truscott, J. R.	Binford
Trowbridge, E. H.	Rutland
Underwood, Frank	Sarles
Van de Erve, H.	Fingal
Van de Erve, W.	Pingree
VanDyke, F. H.	Williston
Van Houten, J.	Valley City
Verrett, B. D.	Rolla
Vidal, J. W.	Fargo
Virgo, G. L.	Thorne
Voss C.	Hettinger
Wadel	Portland
Wagar, W. D.	Michigan
Waldren, H. M.	Drayton
Walker, J. J.	Cavalier
Wands, E. E.	Lisbon
Warren, J. G.	St. John
Wanner, W. B.	Wimbledon
Warren	Leeds
Waugh, Thomas F.	Park River
Webb, E.	Emerson
Weible, R. E.	Fargo
Welsh, W. H.	Larimore
Weyrens, J. P.	Taylor
Westeen, A. A.	Grand Forks
Westley M. D.	Cooperstown

White, Wendell	Leigh
White, S. G.	Ambrose
Wheelock, D. O.	Eckman
Wheelon, Frank E.	Minot
Wheeler, H. M.	Grand Forks
White Wm. E.	Mayville
Whittemore, A. A.	White Earth
Wicks, F. L.	Valley City
Wicklund G. C.	Hannaford
Widmeyer, J. P.	Rolla
Wigg, I. C. J.	Kenmare
Wilder, K. W.	Wyndmere
Williams, R. P.	Gwinner
Williams, M. R.	Devils Lake
Williamson G. M.	Grand Forks
Willson, H. S.	Crystal
Wilson, W. C.	Grand Forks
Windel, H. C.	Williston
Wink, Helena K.	Jamestown
Witherstine, W. H.	Grand Forks
Wolverton, W. C.	Linton
Wood, W. W.	Jamestown
Woutat, H. G.	Grand Forks
Wright, George	Sherwood
Yeomans, T. N.	Lansford
Young, V. A.	Hankinson
Zimmerman, S. A.	Valley City

